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Life stage characteristics of nurses as determinants to continuing educational policy

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LIFE STAGE CHARACTERISTICS OF NURSES AS DETERMINANTS TO CONTINUING EDUCATIONAL POLICY

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This thesis incorporates original research conducted by the author and includes no material accepted for any other academic award in any univeristy. To the best of my knowledge, it does not include any material authorized by another person, except when duly referenced.

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ABSTRACT

Continuing nursing education is perceived by many nurses as an important professional issue. Many earlier studies elaborate on the problems of continuing nursing education without taking up the challenge of curriculum development. Using a developmental framework derived from life/career stages theory, the aims of the present research were threefold.

The first aim was to identify the nurses' career stages. In an attempt to introduce a somewhat systematic treatment to the intangible notions of career stages, the exploratory exercise of Delphi technique was conducted. A panel of experts covering a wide range of nursing, education and administration experience was invited to participate on the basis of their professional experience and an appreciation for research. Using a two dimensional approach of Importance and Confidence Scales (as indices of the nursing experts' judgement), three career stages, namely, the Beginning Nurse Practitioner, the Developing Nurse Practitioner and the Experienced Nurse Practitioner were identified. For the three career stages, three different methods (the Dollar Voting, Relevance Test and the Magnitude Estimation Procedures) were employed to test the variable reliability and stability over scaling technique.

The second aim of the research was to develop a continuing nursing education curriculum that would meet the needs of nurses of different career stages. Continuing nursing education is important to all of these groups. However, the researcher is particularly interested in the beginning nurse practitioner stage, especially at the point where the nursing student is newly graduated. The basic strategy for selecting relevant curricular content for the beginning practitioner was designed in three stages involving careful analysis and classification of data, expert assessment of that data and validation through the continuing nursing education preferences inventory. A quasi-experimental pretest-posttest design discussed by Campbell and Stanley (1966) was employed in order to

determine gains and losses of nurses on indices of intended outcomes over a set period of time. A total of 74 participants was involved, representing 5% of the total number of potential college nurse graduates in New South Wales in 1988.

The third aim of the work was to investigate the clinical environment that might influence the desired effect presumed to arise from a continuing education programme. The purpose of this follow-up study was to answer the research question:

What are the factors which influence the beginning nurse practitioner's commitment in continuing education? A case study methodology was used to examine four hospital settings.

The findings show that the experimental curriculum used could be an effective curriculum format. The beginning nurse practitioners undertaking the experimental curriculum held more positive attitudes in all aspects of criterion measures immediately after the experiment. However, after a period of six months, while the experimental nurses remained positive in some dimensions, the control group showed increasing improvement. Examining the changes over time, it was shown that the curriculum had significant effects on some aspects of criterion measures. Six months later, these significant effects disappeared. The follow-up case studies showed that clinical areas that were conducive to continuing nursing education had developed staff development strategies and good interaction between various staff. In order to implement continuing nursing education successfully, the involvement of the nurse unit managers was indispensible.

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CHAPTER ONE

INTRODUCTION

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During the short history of nursing education in Australia, in few periods has so much evidence of the need for change been amassed as in the present decade. In the state of New South Wales, the location of this study, the amassing of evidence during the 1980s has been accompanied by wide ranging expectations of change. These expectations were fuelled by an announcement made in November 1983 by the Premier of New South Wales.

At the crux, was an announcement that the responsibility for pre-service nursing education would be transferred from the Minister for Health to the Minister for Education from January 1985, at which time the first enrolment of nursing students in both country and city colleges would begin.

The issue of control of nursing education had been contentious within the nursing profession for some time and the resolution of the issue was hailed as indicating a new direction for the planning and further development of nursing education in the state. With the announcement of the intention to transfer the control of nursing education from the Ministry of Health to Education, some of the more obvious impediments to planning for the future of nursing education were removed. The leaders in the health fields and nursing education, however, were relatively slow in displaying the initiative required to maximise the opportunity in choosing directions for and planning of continuing nursing education. Virtually all of the available effort was thrust into pre-service nursing education.

Notwithstanding such effort, there is evidence in nursing literature and in current debate and discussion among nurses, that an increasing range of societal and work pressures impinging on the lives of health professionals will force much greater attention upon

continuing nursing education. There is widespread dissatisfaction with existing continuing educational programmes right across the range - their development, their format, their implementation and their inability to meet the needs and demands of nurses and of health care systems. Put simply, the lack of well constructed continuing nursing programmes is seen by many as an important and pressing problem in nursing.

1. The Basic Questions

Although there is some literature from the United States of America on continuing education for nurses, most studies elaborate on the problems of continuing nursing education without taking up the challenge of curriculum development. In Australia, research in continuing nursing education is virtually non-existent, a state of affairs probably attributable to relative recency. Many nurse educators are experiencing difficulty in designing coherent continuing nursing curricula. Continuing nurse educators are often asked: How can you develop a continuing nursing curriculum that meets nurses' personal and professional needs? and What are the effects of what you are doing?

The basic questions in this research are:
Can continuing nursing curricula be developed that would meet the needs of nurses in different career stages? Given the problems faced by many continuing nursing educators, as discussed in subsequent sections, will the curricula generated encourage nurses to attend continuing education, motivate them to commit to life-long learning, and apply in daily practice the new knowledge and skills gained?

2. The Present Situation in the Nursing Services

There is increasing public dissatisfaction with perceived declines in the standard of nursing services. There are also expanding demands on nursing services in such areas as

community nursing and care for the elderly. At the same time, there appear to be declining fiscal resources with which to address these demands. Within the nursing profession there are perceptions of lowered staff morale and dissatisfaction with work. As McFarlane (1981) observes, one important symptom of these conditions of conflict is the heightened sense of competitive rather than co-operative relationships, between nurses and administrators as well as between health professionals and the general public. Other overt manifestations of fiscal stress such as reduction in nursing force, diminished aids and resources, and increased patient admissions only serve to compound the situation.

Further, Slater (1974), Gross (1976) and Bohm (1977) point out that when economies are volatile, a residue of problems will accrue for the nursing services. Not the least of these will be rising expectations. The tensions produced by these increased demands and the way in which they are responded to will have a great deal to say about the shape and manner of future continuing nursing education. This is a critical point in discussing contemporary staff development patterns. Shifts in expectations of nursing have been dramatic over recent decades.

Being asked to do more with less in our nursing systems forces consideration of several alternative courses of action. Firstly, nurses could carry on largely as they do now, but with an increasingly obvious handicap. Secondly, they could increasingly accommodate special or categorical needs. Thirdly, they could refuse many demands, revise present policies and clearly define the limits of their services. A fourth and strong possibility already evident as a trend in the 1980s is that while the dialogue about the mission of nurses is sharpening, nurses will have developed new dimensions of elasticity and undesirable superficiality in response to increasing demands.

If such a possibility were to be realised, the most obvious defence would be to re-develop the task of nursing as a more collaborative and complementary endeavour than it

is at present. The increasing realisation that a single nurse simply cannot be all things to all people will likely forge more co-operative arrangements between nurses. The limited resources for health care and social services will lead, in many areas, to a closer working relationship between hospitals and social service agencies and to a clearer delineation of responsibilities. The implications worth considering for continuing nursing education include the following:

(a) increased focus on professional issues;

(b) increased concern with nurses becoming more expert and specialist in fewer domains;

(c) increased acceptance as a normal and common form of nurse functioning that can be embedded in the job.

In summary, current and common modes of continuing nursing education can be helpful and should continue. It is suggested, however, that a positive consequence of the present difficult circumstances and those envisioned for the immediate future may well be a growing rejection of general tactics. A general approach will increasingly be viewed as unacceptable when compared with the magnitude of the challenges and there is likely to be a discernible evolution to continuing education curricula that relate to nurses' professional concerns and career stage needs.

3. Current State of Continuing Nursing Education

It seems appropriate to examine the current state of continuing nursing education. Review of relevant literature reveals many sources, including Styles (1976), Popiel (1977), Cooper (1978), Heath (1980), Studdy (1980), Lysaght (1981) and King (1981), which represent well the current characteristics and problems of continuing nursing education.

For instance, Heath (1980) in her study of 264 nursing staff who had some commitment to in-service training offers a typical view of the problems arising in continuing nursing education. These include:

* Inability to convince nursing managers that staff development is of vital importance for the services;
* Failure to encourage qualified nurses to value their own continuing personal and professional development;
* Failure to recognise that the training personnel also need help;
* Lack of appropriate criteria for nurse managers to select staff for continuing nursing education programmes;
* Ineffective methods for publicising programmes, activities and services of the in-service training department/officer;
* Little systematic attention to identifying education and training needs;
* Inadequate evaluation of effectiveness of staff development programmes;
* Lack of coherent staff development plans; and
* Inadequate funding for staff development in the institutions.

Taking the published literature as a whole, it is possible to synthesise seven major issues in continuing nursing education:

(1) Continuing nursing education curricula are determined by the needs of the employer health institutions (Whalen 1977, Courtney 1978, Moore 1980, Munk 1980, Sweeney 1980, Fredericks 1981, Foglesong 1983 & Kegan 1983). The curricula, in the main, are not based on the needs of nurses, but are determined by the employer's perceptions and expectations of skills needed by nurses entering hospital practice. Furthermore, these curricula tend to reflect the interests and expertise of the providers of continuing education programmes - usually Institutes of Higher Education and In-service nurse educators. The programmes are often seen by the employer as a means to satisfy, reward and retain established nursing staff and to cut down the expenses of termination and staff turnover.

(2) Control of continuing nursing education curricula is an increasingly prominent issue, with emerging pressures to decentralised control of staff development from the nursing administrators to the educationists, at the very least on a shared basis (Collun 1980, Curran 1981, Poulin and Clifford 1980, Gothler 1983 & Haggard 1984). Collun and the other authors argue that there has always been a gap between nursing education staff and administrators as members of each speciality seek to do their separate jobs. However, administrators must learn to involve and collaborate with education staff in initiating continuing education programmes. It is further considered that as decentralisation of control progresses, the nursing units responsible for staff development programmes become more and more autonomous and that in itself, this fact is very positive as a more coherent staff development programme can be planned with more adequate funding.

(3) In other countries, such as the United States, continuing education curricula are mainly imposed on nurses either as mandatory continuing education requirements to renew registration or by external (monetary) incentives to gain improved qualifications (Stuart 1975, Styles 1976, Cooper 1978, Chambers 1979, Adcock 1980). This pattern is in contrast to Australia where continuing education is a voluntary activity. There appears to be a definite split in thinking among nurses on the issue of mandatory or voluntary continuing education. It is argued that one way to ensure that nurses do keep up with change in nursing practice is to make it mandatory, and mandatory continuing education could ensure that nurses who re-enter practice after an absence from employment, could become competent practitioners.

The proponents of voluntary continuing education on the other hand point out that learning does not occur under force, and that if courses are accessible and relevant, nurses will take advantage of continuing education opportunities. They also note the danger in making continuing education mandatory for re-licensing in the absence of good evidence of its effectiveness in improving nursing practice.

(4) Existing continuing nurse education curricula generally suffer from lack of acceptance as major endeavours requiring high priority. There is increasing concern with the multitude of problems relating to the mechanics of staffing, financing, and scheduling (del Bueno 1975, Cantor 1975, Beardon 1978, Heath 1980, Presler 1982, Ellis & Greenwood 1983). This concern extends to the argument that administrators of health agencies, schools of nursing and educational institutions must place enough value on the ultimate results of continuing education programmes to accept the responsibility for providing opportunities for personnel to attend courses away from their own work situations. It also extends to an assumption of financial support for staff attending courses and to the promotion of measurable feedback to educational institutions about the results of the courses in terms of improved patient services.

(5) There are increasing criticisms of the current techniques used in the delivery of continuing nursing education in that programmes often do not take the learning styles and career choices of the nurses into consideration (Meyer 1977, Tobin 1979, Sanford 1979, Jernigan 1980, Cooper 1983 & Boss 1984). There is general consensus that nurses need a climate that allows freedom to determine their modes of learning and to implement change through application of newly learned skills and knowledge. Those responsible for planning and teaching in the area of continuing education must be always mindful that they are dealing with adult learners who have specific needs, both professional and personal, that ought to be taken into account when planning, presenting and evaluating programmes. There is a strong emphasis upon designing a process of programme development that produces the content needed to meet best the needs of adult learners.

(6) A persistent cause of failure underlying many of the continuing education programmes is the absence of a coherent conceptual framework to guide the design of the nursing curricula. There are growing concerns that existing

curricula are seldom planned in a systematic way from a sound conceptual framework of agreed purpose and that the system lacks policies, regulations and guidelines (Paulina 1973, Popiel 1977, Chambers 1979, Roell 1981, Sovie 1981). Nurses are questioning the quality of educational offerings and the relationship between continuing education and nursing practice and there remains a pressing need to identify and agree upon those theoretical and practical aspects essential to the achievement of high standards.

The planning of the continuing nursing education curricula needs to be based in objective thinking and to be capable of meeting the health care requirements of modern society as well as the professional interests and concerns of nurses themselves.

(7) Continuing nursing education curriculum development typically is undertaken along the lines of the linear, rational model attributed to Tyler (1949). On this aspect, Barber (1977), Davies (1984), Starck (1984) and Fojtasek (1985) are all critical of the uncritical acceptance of continuing education curriculum as a linear relationship of "means and ends" and, indeed, of the appropriateness of the linear model for the development and implementation of continuing education programmes. The Tyler model, with its separated ends-means orientation, is a logical, rational approach to curriculum planning. There is little doubt that the model can result in effectiveness and efficiency of learning. The problem is, however, that with its ends-before-means approach, the model maximises the nurse educator's power and control because that is the person who establishes the objectives and establishes them in advance of selecting learning experiences. The nurses who participate in continuing education programmes, because they have little or no influence over objectives, have not much freedom and independence. They must follow the direction set by the nurse teacher rather than find their own. Continuing nursing education, it is argued, should maximise the nurse's own power and control. Continuing education needs to encourage nurses to be self-

directed and to choose for themselves what learning to pursue. A programme that the nurses perceive to be imposed on them from the establishment is precisely in conflict with the concept of nurses as self-directing human beings.

4. The Pressure for Change

There are many dimensions of increased pressure which professional nurses have to face today. One major pressure involves the demands placed on the nurse's role that flow from rapid technological improvements, with concomitant changes in medical practice. What might have been adequate preparation for the practice of nursing a few years ago is not sufficient for today's needs. There is also emerging evidence that with changing patterns in mortality and morbidity (for example, an increasing incidence of degenerative disease and trauma due to road traffic accidents) and with alternations to health care delivery (for example, an increasing emphasis on non-institutionalised care), the role of the nurse both professionally and industrially is changing.

The relationship between societal and technical change and subsequent pressures for reform on health care systems and nurses has been described by many sources such as Evans (1974), Gross (1976) and McFarlane (1981). These sources confirm that nurses face constantly increasing demands to remain both professionally up-to-date and personally capable of coping with the stresses of nursing and changes in their own lives.

As a specific example of these pressures, the Report of the Committee of Inquiry into Nurse Education and Training (1978) - The Sax Report - has identified the following requirements in the expanding role of the Australian nurse. These include planning, implementing and evaluating the nursing care appropriate to the needs of individuals; to accept individual responsibility and accountability for nursing practice; to function interdependently with other health professionals; to communicate effectively with patients and clients, their families and other members of health teams; to appreciate the place of

research in nursing practice and participate in nursing research projects; and finally, to undertake continuing education.

It is a basic contention that nurses need constant access to appropriate forms of further education as an important mechanism for coping with change. This view is supported by the Royal Australian Nursing Federation, the College of Nursing and the Australia National Florence Nightingale Committee of Australia, all of which have proposed that the specified team role requirements for nurses may be achieved through selection and nurse education. These professional bodies believe that hospitals and health agencies should make provision for continuing education programmes. Opportunities should be provided for nurses to attend continuing education programmes conducted by the employing agency and outside agencies.

In addition to this direct reference to the need for continuing nursing education, six other areas of identifiable influence have further provided impetus for more appropriate continuing education. These include:

(1) Increased public scrutiny and community pressures on health care - such as demands for "accountability" (see McFarlane 1981 and Patten 1975) - are translating into legislative and administrative requirements that specify the standard of health care to be delivered. These demands also create pressures for continuing nursing education to assist nurses in implementing effective responses to these requirements.

(2) Increasing demand for continuing education is advocated and sought by nurses. This demand is best described by Paulina (1973), Slater (1974), Styles (1976), Cooper (1977) and Heath (1980) who have reviewed the problem of nurse dissatisfaction with existing continuing education programmes and examined the subsequent emergence of manoeuvres toward better structured and planned programmes.

(3) Changing attitudes and relationships between the senior and subordinate staff in nursing are typified by the concept of human resources supervision proposed by Chickerella (1981) and Larson (1984). This approach to supervision argues for satisfied, competent nurses as a goal of the health care system rather than as a means to an organisational end, as in previous hierarchical philosophies of supervision in nursing. Acceptance of this perspective on the importance of nurses' job satisfaction provides some resolution of the current dilemma about the basis of continuing education as between individual nurse needs and system need. In fact Studdy (1980) argues that this choice should be resolved by educational programmes committed to the professional and personal growth and development of nurses as the "needs" basis for continuing education.

(4) Expanding knowledge of principles and processes by which adults - as distinct from children or adolescents - learn is provided by adult learning theorists such as Knowles (1979). Andragogy is the term used by Knowles to refer to the principles and practices of adult learning, as opposed to pedagogy which provides the corresponding concepts for pre-adult learning. The andragogical viewpoint perceives the adult as an autonomous learner possessing great experience, capable of setting his own goals and selecting his own problem areas - which essentially relate to his immediate perceived needs. This type of belief about the recipient of education has major implications for continuing nursing education as discussed by Barber (1977).

(5) Changing needs of adults as they move through life - in both a career sense and in a personal, developmental sense - is increasingly receiving formal recognition. A number of authors such as Dalton and Thompson (1977) and Benner (1982) have written of developmental career stages in nurses and professional workers. All these sources propose variations of a basic concept that the professional needs and interests of nurses and other professionals appear to change as they move through

career stages.

In a personal (as distinct from professional) paradigm of stage development in adults, Knowles (1981) and Erikson (1963) provide reviews of more general adult developmental stages. These authors propose variation in detail of the stages of developmental change in individual's characteristics, needs and interests as they progress through adulthood. Acceptance of any form of nurse career stage and adult developmental stage concepts has significantly influenced the needs-based approach to planning continuing education for nurses.

(6) Finally, there is the dissatisfaction with both the relevance and applicability of the linear model of curriculum development used for continuing education programmes. Sources such as Beardon (1978), Popiel (1977), Ellis (1983), Davies (1984) and Starck (1984) have commented on aspects of alternatives to traditional curriculum development for continuing education.

For example, Studdy (1981) and Popiel (1977) both argue for a multidimensional approach to continuing education curriculum development. In this approach, different sets of goals, interests, needs or priorities are simultaneously translated into curriculum content, appropriately designed for particular users of educational programmes.

This multidimensional curriculum development based on different set of users needs is seen as an approach worth testing to replace the linear "ends-means" models of curriculum construction for continuing educational programmes.

In summary, it is considered unlikely that the diverse sources of pressure on continuing nursing education could be satisfied by existing forms of continuing nursing curricula, already under severe criticism. It appears evident that the major problem lies in the inappropriateness of present continuing education curricula construction.

There can be no doubt that curriculum implementation aspects, such as unsuitable sites and inappropriate delivery mechanisms, contribute to the inadequacies of present continuing education programmes. However, there appears to be an urgent need to re-examine current continuing nursing education curricula. It seems worthwhile to test multidimensional nursing curricula which provide a matrix of nurse's career stage needs, motivational preferences and job satisfaction.

5. Special Features of Continuing Education in Nursing

It is difficult to understand properly the characteristics and problems of current continuing education in nursing without reference to the organisational context in which nursing exists. This section elaborates important aspects of that context, including organisational events and larger social structures that appear to be influential on the way staff development and other forms of continuing education are conducted in nursing.

5.1 Goals and Purposes

Organisations exist with goals and purposes. Indeed, Perrow (1970), Dornbusch and Scott (1975) assert that goals in any organisations serve at least three functions; as a source of legitimacy, as a source of direction and as a basis for evaluation. The first function of goals, as a source of legitimacy, serves to justify and symbolize the rightful place of the organisation and its actions in the wider scheme of things. These authors argue, for instance, that business organisations can justify layoffs in a time of recession because continuing employment of unneeded personnel would be harmful to the organisation's pursuit of the profit motive. The justification is generally accepted in our society even though such layoffs may create considerable suffering for individuals. By the same token, there have been occasions in the history of Australian society when government actions are intended to create work for the unemployed on the justification that one of the legitimising goals of government is to promote the general welfare. Thus, it can be seen that "legitimacy" can be different (and apparently opposite) as between

organisations - in this case, a corporation and a government.

A second function of goals is to provide a source of direction for action; that is, goals indicate what actions should be taken and how these actions should be carried out. For example, when a business organisation is confronted with a decline in work morale, decisions about whether this condition requires some organisational action will be shaped largely by judgement as to whether such action will lead to disruptions that might worsen the problem. It is interesting to search for parallels in the provision of nursing services.

A third function of goals is to serve as a basis for evaluation and to suggest criteria by which the effects and effectiveness of various actions should be assessed. Business people, for example, frequently use the term "bottom line" to refer to the fact that the ultimate success of the actions they take is properly evaluated in terms of profit and loss. Members of a professional organisation, on the other hand, might more appropriately evaluate the success of the actions of their organisation in terms of attracting new members who have the characteristics the organisation values.

As Roper (1980), McFarlane and Castledine (1982), Du Gas (1983), Chin and Jacobs (1983) describe, in nursing, the primary legitimising goals have to do with care of patients. Logically, then, the goals that should provide direction for the hospital are goals that have to do with the caring of patients, and the effects and effectiveness of actions initiated by the hospitals have to be assessed in terms of the efficacy of the action in achieving these goals. If the goals used to legitimise actions in nursing are primarily goals associated with the caring of patients, all other goals will be subordinate to these patient-oriented goals. Continuing education, on the other hand, centres on the education of nurses. The goals that provide direction for these activities are goals associated with perceptions of the proper education of nurses. Frequently, these actions that are necessary, or are perceived to be necessary, to pursue properly the goals associated with the education of nurses may interfere with the goals associated with the care of patients.

For example, providing nurses with release time to attend staff development programmes removes nurses from duties. Many nurses and administrators view the uninterrupted presence of the nurse in the ward as critical to the continuing care of patients. Thus, any continuing education activity that systematically removes nurses from their duties is likely to be resisted by some nurses and administrators as distracting from the primary mission of the hospitals. While many staff development specialists argue that staff development should occur in working time, it is difficult to dismiss the fact that, as nursing is now organised, honoring this expectation can create a false impression to the public that hospitals are not attending to the business they have been legitimised to conduct, that is, the business of caring for patients. Furthermore, as del Bueno (1975) indicated, many nurses who have received release time note the futility and wastefulness of attending in-service education and are as outspoken in their criticisms of its disruptive nature as are those who do not receive release time.

The important point here is that many nurse administrators consider the goals used to legitimise actions in nursing (goals associated here with the caring of patients) are often in competition with the goals that give direction to continuing education activities. Those programmes that are perceived to be disruptive to the efficient pursuit of patient oriented goals (for example, programmes that provide too much release time or programmes that require nurses to provide too much time to their own education) are likely to be viewed as nonlegitimate. This is demonstrated by the fact that hospitals tend not to staff for nursing on the basis that a percentage of their nurses will, at any given time, be involved in continuing education. In sum, the inability of hospitals, as they are presently organised, to legitimise continuing education as a worthy pursuit in its own right creates dynamic and complex patterns of competition and conflict between the requirement of high quality continuing education for nurses and high quality nursing services for patients.

Perhaps as critical is the fact that the failure of continuing education to be directly linked to any legitimising goals other than those associated with the caring of patients, makes the

resources officially committed by the system to support continuing education highly problematic and subject to continual negotiation. For instance, in nursing, persons most likely to be called on to take on assignments with a seasonal character, such as relief supervising, are most likely to be drawn from the in-service nurse educators. This in turn impairs nurse educators' ability to plan a comprehensive continuing education programme.

There is little empirical evidence to support assertions that participating in continuing education activities clearly results in an improved capacity to pursue the goals associated with patient care. Such arguments have been well documented by Stuart (1975) and Adcock (1980). In addition, as Sanford (1979) and Jernigan (1980), further point out, many nurses are questioning the present quality of continuing education. Thus, when decisions must be made about supporting continuing education (perceived as it often is to be disruptive) these decisions are typically unfavourable to the continuing education enterprise. Similarly, when budget cuts must be made, one of the first areas to be affected is continuing education.

Those organisations that do have legitimate goals in the area of continuing education (for example, institutions of higher education) are typically located outside the authority structure of hospital systems. Those in hospitals have little ability to affect directly those outside organisations. Thus, it is not surprising that the legitimised continuing education programmes that are developed tend to serve the peculiar interests of institutions of higher education as frequently as they do the professional interests and concerns of nurses. Because hospitals are not involved in the planning, such programmes also lack fiscal support from hospitals as a consequence.

Perhaps as Denton (1978) and Cockerham (1978) suggest, in spite of claims of rationalists, hospitals and other organisations do not operate on the basis of deductive logic, but rather on the basis of a sociologic. Sociologic takes into account non-rational

elements as well as those that are rational. Sociologic also takes into account negotiations among competing interests and competing goals as well as the compromises that necessarily take place between the efficient pursuit of primary goals and the expectations embedded in the larger environment. These non-rational forces most clearly come into play when an organisation such as the hospital takes on goals and functions (in this particular instance, planning continuing nursing education), that are, or appear to be, in competition with the goals which serve as a primary basis for legitimising the organisation.

Hence, until these issues are directly faced, there seems to be little prospect that the quality of continuing education in nursing will be substantially improved. Furthermore, given the dubious legitimacy of continuing education, economic retrenchment may reduce the quantitative emphasis as well.

5.2 Continuing Education as Rewards

There are further indications that continuing nursing education has been seen by employers as an incentive system to reward and retain staff (Munk 1980, Fredericks 1981). Indeed, if one is to understand how continuing education operates in nursing, one must understand how such activities are associated with the reward structure of the hospital. There are several conditions that seem to be typical.

First, in most hospitals, rewards that can be purposefully distributed on a differentiated basis, such as pay increases or promotions, are scarce. The way hospitals are organised and the way the nursing occupation is structured limits the reward system. Those rewards that do exist are likely to be distributed equally among categories of nurses (for example, salary increments based on experience).

Second, to the extent that hospitals do differentiate among nurses in terms of rewards, especially monetary rewards, this differentiation is more likely to be based on

participation in continuing education that results in extra qualification allowance than on any other conditions such as demonstrably better performance. Indeed, the idea of differentiating among nurses for pay purposes, on any basis other than participation in continuing education and the extra qualification and experience it provides, is ideologically repugnant to many nurses.

Third, opportunities for status rewards are closely linked with participation in continuing education. For example, if one aspires to move from the ranks of registered nurses to the ranks of charge nurses, supervisors and directors of nursing, one must pursue a course of further study to gain extra qualification. In fact, the visibility alone from participating in systematic continuing educational activities can be highly valued by nurses who desire to move up in the system.

In sum, the way hospitals are organised creates a condition in which participation in continuing education is a powerful force in determining the degree to which one will gain access to those few differential rewards that are available in the system. Since such rewards are scarce in nursing, this relationship is an important one.

There are, in addition, a number of other important consequences that flow from the way staff development and continuing education are embedded in the reward structure. First, given the scarcity of differential rewards available in nursing, and given that participation in continuing education is (a) one of the clearest ways to gain access to these rewards, and (b) one of the few legitimate means by which rewards can be distributed on an unequal basis, policy and procedures for continuing education become subject to a variety of pressure and interests that are only tangentially concerned with professional growth and development. For example, there can be little doubt that linking pursuit of extra qualifications to differential salary increments encourages some nurses to pursue further study for no other reason than to advance on the salary scale or gain a promotion. That the pursuit of such study could, should, or might lead to professional growth and

improved patient care is not denied. However, one would be naive to assume that present conditions do not encourage a great deal of ritualism, whereby nurses tolerate a wide range of irrelevant curricula in order to achieve their primary goals - a promotion or salary increment.

There are, in addition, further illustrations of how the reward structure is co-opted to support programmatic concerns other than, and sometimes in competition with, the development of systematic continuing nursing education programmes. Obviously, as McDonald (1977) noted, colleges of higher education have a vested interest in maintaining the link between the pursuit of further study and salary increments, precisely because this linkage serves to maintain college enrolments. Similarly, nurse administrators sometimes use continuing education programmes, conference attendance, and release time as means of rewarding nurses for past performance rather than as a means of assuring continuing growth. In effect, participation in continuing education, especially if that participation involves release time or gaining extra qualification leading to salary increments, can function as a proxy for merit pay.

One of the results of the relationship of continuing education to the reward structure is that some nurses perceive that hospital-sponsored and hospital-supported continuing education is reserved for special and select categories of nurses. Such perception often serves to enhance any latent source of conflict in hospitals; it activates competitive actions between and among nurses and fosters feelings of relative deprivation among groups that are structurally denied access to the rewards that are available.

The basic point is this: given the way continuing education is related to the reward structure of the hospital, it is called on to serve many functions rather than meeting its primary aim of nurses' career and professional development.

5.3 Change and Maintenance Functions

Like other organisations, hospitals are concerned with both stability and change. If nursing is to pursue effectively the goals for which it has been established, it must maintain sufficient stability to insure that most of the energy expended is directed toward these goals. On the other hand, nursing cannot be effective unless it has the capacity to adapt to new conditions and the capacity to ensure that those who practise nursing perform at an optimal or near optimal level.

The literature in nursing, especially in nursing education and staff development (Slater 1974; Popiel 1977; Shores 1978; Tobin 1979 & Chamber 1979) is more attuned to issues of change than issues related to maintaining stability. Indeed, many nurse practitioners and researchers find the ability of nurses to resist change to be one of the most perplexing and interesting problems they confront. Furthermore, the literature in nurse education and staff development is much more concerned with linking continuing education to change in nursing than with linking continuing education to stability.

In the nursing literature (Cope 1980, Pearce 1980, Smith 1983, Campbell and Williams 1983), there are useful examples of how change has been effectively introduced in nursing and how continuing education has been used to support these changes. Yet one cannot read the literature without gaining the impression that for the most part, efforts to change nurses have been relatively ineffective, and continuing education has not been proven to be an effective means of bringing about changes in nursing practices. In spite of these apparent failures, however, nurse educators persevere and some of the most volatile issues in hospitals have to do with who should have the right to control continuing education (Gothier 1983, Haggard 1984). Given the apparent deficiencies of continuing education and the apparent inability to demonstrate clearly that continuing education achieves what is claimed for it, one cannot help but wonder why anyone cares enough about the control of continuing education to bother fighting over it. The fact is, however, that nurse educators do fight over the control of continuing education. This

suggests that continuing education is perceived to serve some vital function, though the functions it serves may not be the functions that are claimed for it.

What functions do staff developers claim for continuing education? Two major functions are easily identifiable. First, continuing nursing education could serve to support the introduction of new ideas, new technologies and new procedures in health care. One may label this as the innovating new technology function. Second, continuing nursing education could serve to enhance performance capacities, to refine existing skills, and to expand existing knowledge regarding new developments in nursing. This function may be referred to as improving existing performance function. In addition, one can suggest that continuing nursing education also serves a third function, that is, maintaining the present performance function. This function refers to those conditions that must be fulfilled to assure compliance with preferred nursing administrative routines, to support organisationally preferred modes of operating, and to protect those engaging in those activities from unwanted outside interference.

If one considers the dubious legitimacy of continuing education in nursing, and the way continuing nursing education is related to the reward structure, one can gain a fuller appreciation of the reasons why continuing education so often serves the maintenance function exceedingly well and why continuing nursing education is employer oriented and not nurses oriented. If one considers the way hospitals are related to their larger environment and the pressure that the public places on hospitals to change, one can more fully understand why it is perceived by many nurse administrators to be important to resist the change and to attach continuing education to maintenance the function.

Finally, if one considers the pressure that the emphasis on change places on hospital maintenance systems, in which the few flexible resources of nurse administrators are disproportionately given over to continuing education, the fights for control of continuing education become better understood. Obviously, keeping things from getting worse

while undergoing the dislocations produced by change requires more maintenance effort than is required when a situation is stable. Thus, as pressures for change increase, pressure on the existing maintenance system increases as well. Since the amount of resources that hospital systems have for maintenance purposes is limited to begin with, there is strong pressure to co-opt flexible staff development resources, ostensibly committed to change, for the purpose of maintaining the system rather than changing it.

The pressure for change in the Australian Health Care system has been well documented (Mancock 1973, Evans 1974, Patten 1975, Lambert 1975, Ibell 1975, Gross 1975, Gross 1976, Ford 1976, Schlotfeidt 1977 & McFarlane 1981). One need only read newspapers or watch television news to know that there is tremendous pressure on the health care systems to change and improve. Indeed, many nurses are convinced that if the health care systems do not change and improve, the future of health care is threatened. Improvement and change require considerable organisational resources and the expenditure of additional time. Change also requires that high priority be given to those research and development activities that are necessary to produce the information and technologies upon which change is based. Change also requires detailed planning. At the same time, a system undergoing change must make provision to maintain itself in such a way that present performance levels do not erode.

For those who are knowledgeable about the operation of the typical health care system, it should be unnecessary to document the fact that long-term planning and research and development activity are not high priority items. Consequently, the style of continuing nursing education curricula tends to reflect the employer's immediate concerns rather than focusing on nurses' global career stage needs. If medication error is perceived as a major issue, there is a strong pressure to run workshops for nurses that focus on drug safety. Conceivably, such workshops could bring about change, but if they were to do so, they would require considerable follow-up and the type of support necessary to establish new procedures and technologies. However, programmes that support the improvement of

current practice are likely to be even more draining on existing resources than are programmes that support the maintenance function.

Let us reiterate. Given the fact that the demand for change is seldom coupled with additional resources to support change, there is strong pressure to use those limited resources that are available for staff development activities that are primarily oriented toward maintenance. For example, providing workshops on drug safety for all the nurses in the hospital can be used to convince a concerned public that something is being done to deal with the drug mistake problem. Thus, nurse administrators encourage continuing education curricula to reflect their concerns, and their concerns frequently translate into nothing more or less than teaching nurses how to comply with requirements of a local hospital system. Yet, it is of paramount importance that nurses, as recipients of the continuing education, are in a better position to identify their own concerns, and to demand curricula relevant to their needs.

What is being suggested here is that the way nursing is organised and the way continuing education is embedded in nursing make it difficult, if not impossible, for continuing education to meet the professional and personal concerns of nurses as present. The only real function that continuing education is serving currently is the maintenance function. Indeed, nurse educators who are responsible for continuing education are unable to resist demands that their activities support the employers' needs even when the activity is legitimised in terms of meeting the concerns of nurses.

5.4 Ineffective Curriculum Construction Process

As there appears to be considerable need for continuing nursing education (Studdy and Hunt 1980, Hyde 1981, Olade 1982, Urme and Trickett 1983, Deacon 1984), one could assume that such activities would be a frequent and regular part of the lives of nurses. Unfortunately, reports do not support such an assumption. Nurses almost invariably report that they have participated only in minor staff development activities during the

course of the preceding year (Slack 1981, King 1981). In fact, in their study of educational needs of qualified nurses, Studdy and Hunt (1980) discovered that the great majority of nurses had engaged in various forms of staff development not more than once a year, even though nurses considered that staff development generally was either an excellent or a good idea.

Perhaps most devastating is the generally ineffective curriculum construction process as described by Popiel (1977), Chamber (1979) and Sovie (1981). There is a lack of theoretical framework in which continuing nursing education curricula are modelled. What emerges is a not so pleasant picture of a needed enterprise that is fragmented, infrequently engaged on a regular basis by nurses, not regarded very highly as it is practised, and mainly assessed in terms of nurses' opinions of relevance.

In examining why continuing nursing education is in its present situation, frequently cited criticisms can probably be placed within the following general statements:

1. Educators who are responsible for organising and implementing staff development activities are frequently disadvantaged as there are practically no higher education offerings aimed at improving personal responsibility for staff development (Cantor 1975).

2. Little continuity and co-ordination exists between or among staff development offerings and it is difficult if not impossible for nurses to see how apparently unrelated in-service activities will in any way allow them to do a more effective job (Fujtasek 1985).

3. Continuing education is often presented and perceived as a way to correct a deficit rather than as a normal growth experience. Little attention is paid to the educational needs or stage of career development of the nursing staff. Thus one sees a situation where the nurses are often mandated to participate in a staff development

programme of an externally determined nature which does not adequately consider their present interests and professional concerns. Despite recent attempts in hospitals to take account of individual attitudes toward a particular continuing education focus and to allow for adulthood as a legitimate and special stage of learning, the norm in structuring continuing education curricula continues to be a largely undifferentiated, deficit approach (Sovie 1981).

4. Too often, continuing education activity focuses solely on the nurse as the responsible party for improving patient care without sufficient attention to other organisational, social and personal factors in the caring process. There is little consideration of the nurses' motivational preferences and job satisfaction. Thus nurses frequently leave staff development activities with the frustration and disillusionment that the staff development curricula are irrelevant to their needs (Mulholland 1980).

Perhaps the most serious criticism that could be levelled at continuing education today is that it generally fails to consider the content and processes of effective staff development curricula construction. Not only is there a lack of evidence about effective staff development processes, there is also a paucity of theoretical bases around which one may begin to conceptualise designs.

There is an emerging body of knowledge related to the importance of individual attitudes about current contents of staff development activities. The basic premise is that it is crucial for the educator to find out where the nurses are in terms of their professional needs in order to match content with prior knowledge and existing workload. The central point is that the content must be considered within the context of nurses' career stages as well as to their attitudes about the use of the content being proposed.

Much more activity is required to explore career stage needs of professional nurses as the rational bases for continuing education. While such activity requires subjective judgement about the meaning of different career stages, it provides nurses with a way to propose alternative continuing education curricula that can be tested in a quasi-experimental fashion in future. This thesis, it is hoped, constitutes the first stage in a longitudinal study of curriculum based on nurses' career stages.

6. The Significance of the Present Situation and Special Features of Continuing Nursing Education

In the previous section, particular issues have been selected to demonstrate that there is substantive evidence that the current status of continuing education practice is one of flux and uncertainty. Pressures are building to reform the inadequate continuing education curricula with processes that are more nurse-focussed and planned on a theoretical framework. The content of these processes will have to address professional needs and personal concerns of nurses that go far beyond needs associated with a traditional view of employer-centred and provider-oriented approaches.

Clearly, the task of understanding and utilizing the potential of continuing education for professional and personal growth is a major endeavour. Appropriate roles for hospital and higher education personnel, as well as the roles of other potential contributors such as professional organisations, have not been investigated in an adequate, systematic fashion. Resources are uncoordinated and under-utilized. Support systems, the backbone of any change efforts, have been neglected. Little effort has been made to determine the ways in which continuing education can really make a difference in assisting nurses in meeting their professional needs. This is not surprising in view of the aforementioned lack of theoretical bases around which educators can conceptualise curriculum designs. Public demands for accountability within hospitals, as well as concerns expressed by nurses about continuing education, are all passed along to

inadequately prepared staff developers.

Yet there is reason for optimism - we now know much about effective adult learning. We have also taken initial steps toward beginning to understand how to look at different career stages of professionals and their various characteristics. We also have a limited knowledge base about effective principles of curricular construction process in nursing as well as the initiation of creative and sound thinking about how to consider staff development as an integral part of any effort to assist professional and personal growth of the nurses.

Perhaps most significantly, we have a situation where health care services are faced with declining fiscal support and a clamoring for improvement in hospitals. The need for better use of existing human and monetary resources and systematic consideration of how improvement can best be achieved is undeniable. It may well be the case that these negative circumstances will provide the impetus that complacency never did.

7. Significance of the Study

The absence of a coherent conceptual framework to guide the design of the continuing nursing curriculum and the uncertain status of continuing nursing education indicate the need for the study.

In the first place, while research in continuing nursing education in other countries such as the United States of America has been initiated, research in continuing nursing education in Australia is virtually non-existent. The present study could provide impetus for the nursing profession to re-examine the current status of continuing education.
Secondly, while empirical research is evident in some of the continuing nursing education literature from the United States, the majority of the studies relate to the pressure and problems of continuing nursing education. Curriculum development has not been the

focus for the continuing education research.

Thirdly, while the importance of continuing nursing education has been voiced, the implications of nurses' career stage needs and motivational preferences have not been drawn. Very little is known about the way continuing nursing education can be used in meeting nurses' personal and professional concerns. The curriculum model developed could provide a framework for career development programmes that can help nurse administrators to identify opportunities for re-structuring nurses' work experiences and to make them more interesting and rewarding.

The idea of a longitudinal study of effects of continuing education curriculum for nurses means that nurses of a particular career stage who have participated in an experimental continuing education programme can be studied over a period of at least five years, this time span representing the approximate mid-point of each career stage. Although it may take many years before the results of the whole study are known and although there is a danger of loss of participants over a period of time, longitudinal study has the advantage that the researcher can pursue in depth a particular point of interest. The researcher will be able to make more objective observations about a given event than the subject who simply makes a subjective recall. In addition, early apparent trends can be investigated in depth at forthcoming data collection points. While this thesis covers only a period of six months prior and after beginning nurses entry to the profession, anticipated work from the longitudinal study would be presented, in series, as it becomes available. The first stage of the longitudinal study concentrates on the design of a curriculum construction process to provide continuing education programmes for Australian nurses and to validate this curriculum construction process.

CHAPTER TWO

REVIEW OF RESEARCH AND RELATED LITERATURE

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REVIEW OF RESEARCH AND RELATED LITERATURE

Several obvious issues emerge from the discussion so far. The first is the definition of curriculum. The second is what is meant by nurses' career and developmental stages. The third relates to nurses' motivation and job satisfaction. These issues are now discussed.

1. Towards an Operational Definition of Curriculum

Reviewing this literature, one notes much confusion as to what curriculum is. Part of this confusion grows out of the variety of definitions and the purposes to which those definitions apply. This variety reveals itself in the following samples of selected definitions. For instance,

> "Curriculum ... is that body of value - goal-oriented learning content, existing on as a written document or in the mind of teachers, that, when energised by instruction, results in change in pupil behaviour." (Inlow 1973, p 41)
>
> "... a planned set of human encounters, thought to maximise learning." (Wilson 1971, p 64)
>
> "the curriculum is now generally considered to be all of the experiences that learners have under the auspices or direction of the school." (Doll 1970, p 24)
>
> "the curriculum is a vital, moving complex interaction of people and things in a fluid setting. It encompasses question to be debated, forces to be rationalised, goals to be illuminated, programmes to be activated, and outcomes to be evaluated." (Firth and Kimpston 1973, p 3)
> "curriculum ... include all of the experiences for which the school accepts responsibility." (Ragan and Shepherd 1973, p 3)
>
> "the curriculum is considered to be the increasingly wide range of possible modes of thinking about men's experience - not the conclusions, but the model from which conclusion derive, and in context of which these conclusions, these so called truths, are grounded and validated." (Beith 1965, p 262)
>
> "... a selection from the culture of society." (Lawson 1975, p 6)
>
> "... all of the learning of students which is planned by and directed by the school to attain its educational goals." (Tyler 1956. p 79)

> "All learning which is planned or guided by the school, whether it is carried out in groups, or individually, inside or outside the school." (Richmond 1971, p 11)
>
> "A programme of activities designed so that pupil will attain, as far as possible, certain educational ends or objectives." (Richmond 1971)
>
> "Curriculum can be defined as a field of study involved with what is taught in the schools, how it is taught, how what is taught is planned for, and how it is evaluated." (Huenecke 1982, p 290)
>
> By curriculum I mean what students have an opportunity to learn in school, through both the hidden and overt curriculum, and what they do not have an opportunity to learn because certain matters were not included in the curriculum." (McCutcheon 1982, p 19)
>
> "A curriculum is an artifact, a product of human decision making, an expression of human intention have to do with other human beings. The intention is arrived at within a particular culture and pertains to the transmission of some element of cultural content." (Johnson 1976, p 505).

Even from this brief catalogue, it can be seen that "curriculum" can mean everything from content in a particular subject through to the range of life's experiences at a particular time.

Beauchamp (1981), in his detail discussion of curriculum, considers three ways in which the term curriculum is most legitimately used. Firstly, a curriculum can be considered as a written document depicting the scope and arrangement of the projected educational programme for a school. A second legitimate use of the term curriculum is to refer to a curriculum system as a subsystem of schooling, a subsystem within which decisions are made about what the curriculum is, how it will be implemented, and how it will be evaluated. A third legitimate use of the term curriculum is to identify a field of study.

In a somewhat different approach, Huenecke (1982) describes three major approaches in classifying curriculum. The first is the structural approach which focuses either on identifying elements in curriculum and their interrelationships or on the structure of decisions involved in curriculum planning. According to this approach, planning for instruction must include explication of purpose, design and organisation of student

activities to achieve the purpose, and evaluation of progress towards that purpose. In sharp contrast to the Structural approach, the Generic approach focuses not on the curriculum making or on curriculum elements, but on the outcomes of curriculum. The emphasis is on the cumulative effects of schooling on the total person. Finally, there is the substantive approach which highlights desirable subject matter or content. Emphasis is not on the negative aspects of what occurs under the auspices of curriculum, but rather is on areas of omission in the curriculum. The emphasis is more on planning improvement of content than on describing what is typically found at the moment in the school curriculum.

All these definitions and discussions describe curriculum as a structure and process of assessing needs, identifying the desired learning outcomes, planning and preparing for the instructional alternatives to achieve the outcomes and using the cultural, social and personal interests that the curriculum is to serve.

From the research point of view, these approaches treat curriculum as an intervening variable in which the prototypical question is - Given the curriculum, how does a society use it? Alternatively, these approaches treat curriculum as an independent variable in which the proto question is - What does it do to those who are exposed to it?

Yet, a curriculum may be considered as the output of a curriculum development system. In fact, the term "curriculum" is defined by Johnson (1976) as a plan for achieving intended learning outcomes. According to Posner and Ruditsky (1978) an intended learning outcome is:

> "... a statement of what the student is to learn. It may be a statement about facts, ideas, principles, capabilities, skills, techniques, values or feelings. The use of 'intended' emphasised the notion of control and direction in the educational process." (Posner & Ruditsky 1978, p 16)

This conception of curriculum as an output is further supported by Popham and Baker (1980) who define curriculum as all planned learning outcomes for which the school is responsible.

In essence, as Musgrave (1974) proposes, when curriculum is viewed as ends, it is treated as a dependent variable and the essential issue is to show the details of the process by which curriculum decisions are taken. Musgrave's view is echoed by Zia (1976) who suggested that there are two processes involved in curriculum development:

(a) curriculum construction - which is the decision making process to determine the nature and organisation of the curriculum components, and

(b) curriculum management - which is the decision process determing how curriculum construction is to be implemented.

Such a view as Zia's is further supported by Posner (1978), who identifies several domains of curriculum research. The first three domains are:

1. study of the <u>context</u> of planning and development
2. study of the <u>inputs</u> of planning and development
3. study of the <u>process</u> of planning and development.

Using the Musgrave (1974), Zia (1976) and Posner (1978) frameworks, one major focus of the proposed study is to design a process to provide continuing education curriculum for Australian nurses and to validate this curriculum construction process. The first stage of the research approach therefore uses curriculum content as a <u>dependent (output) variable</u>. It is therefore necessary to propose and identify the independent variables which would produce this curriculum.

In searching for independent variables and in selecting a curriculum research theory on which the approach of the study can be based, Johnson's (1976) approach provides a sound theoretical framework.

> "Curriculum research properly concerns itself with the manner and circumstances in which the curriculum development process occurs ... Curriculum research is concerned with the validation of criteria and operational rules used in the process of curriculum development ... The difference between their application and their validation is what distinguishes the practitioner from the researcher." (Johnson 1976, p 506).

Specifically, Johnson suggests that when curriculum is viewed as the dependent variable, the researcher is concerned with two kinds of independent variables:

(a) The "process" by which the intentions are reached and

(b) The "context" in which the process occurs. (Johnson, 1976, p. 506.)

At a technical level, this suggestion is open to question. However, a variation of the idea is useful in summarising the methodology of the present study.

With the present study, the first stage of research treats curriculum content as quasi-dependent (output) variable. Nurses' career stages, educational needs, job satisfaction issues and adult learning principles will be used to establish the desired input; that is, they are a form of quasi-independent variables of the research. Following this, in the second stage, the research will use the curriculum developed as an independent variable with outcome measures focussing on nurses' awareness of lifelong learning and job satisfaction.

2. Career Stages Theories

The Oxford English Dictionary defines stage as "a point or period in development." Indeed, the developmental properties of career stage have been advocated by Foote (1956) who defines the concept of a career as a progression of statuses and functions which emerge in the course of experience. Becker and Strauss (1968) claim that the career concept has been useful for treating certain dynamic aspects of adulthood and

define a person's career stage as "a general description of the course of an individual's progression through the various statuses he or she has occupied (p 312). They treat the career stage as a set of careers both in terms of its being a collection of statuses and attitudes or postures providing direction for their development. Spence and Lonner (1978) assert that to focus analysis on the career stage of an individual is to examine how one perceives oneself in three social dimensions; namely (1) the sociocultural which sets the limits of choice, (2) the interactional which provides the context within which the life career develops, and (3) the inner sense of self where one experiences the sense of success or failure.

In relation to professional workers, the concept of career stages has only been a recent development. Nevertheless, many theorists have written about the developmental career stages of various professions. Published works referring to career stages include Fuller (1969), Smith (1972), Bullough (1972), Gregorc (1973), Dalton (1977), Peterson (1979), Ryan (1979), Newman (1980), Cohen (1981), Benner (1982), Gassert and Holt (1982), Sovie (1982), Kaye (1982), del Bueno (1982), Weeks and Vestral (1983) and Roberts (1984).

All these sources suggest detailed variations of the basic concept that a professional's working life can be described by career stages. These writers represent the growing body of opinion that professionals do experience different career needs within occupational position. These stages appear to result from a complex interaction of maturation, experience, change in attitudes, and interests over the working life span of each professional worker.

For instance, Fuller (1969) published a range of articles in the late 1960's on the professional life of teachers as they progress from college practice teachers through first year teacher to experienced teacher. In his analyses of six earlier studies of teacher career concerns conducted over the period 1932-1967, Fuller advocated a developmental

framework of career stages, namely, pre-service, beginning teacher, and experienced teacher. Such analysis lays foundation for later research. This might not be brilliantly insightful, but it proved useful in focusing research effort in the transitional aspects of professional development.

This early approach on career stages has been pursued by subsequent researchers in two different ways: firstly, as a pattern of change related to a definite age range or career point, a position typfied by Smith (1972), Ryan (1978), Peterson (1979) and Newman (1980), who describe versions of career progression stages such as first year, early, middle, or late career.

The alternate approach is provided by theorists who describe career stages in developmental task terms not immediately related to a particular age or job phase. Instead, career stages are described as a pattern of change related to some developmental characteristics or concerns of the professional worker. For instance, Gregorc (1973) suggests a detailed profile of career development in four stages: becoming, growing, maturing and fully functional professional.

Such an approach is supported by Dalton (1977) who, in his study of 550 professionally trained employees, describes a four-stage model of career development for professionals in organisations - apprentice, colleague, mentor and sponsor. His developmental model describes each one of these four successive career stages in terms of different tasks, different types of relationships and different psychological adjustments. High performance as a professional means as performing well within the appropriate role for that stage.

In nursing, a specific example of this approach is provided by Gassert and Holt (1982), whose version of career stages covers five levels - associate clinical nurse, clinical nurse, primary clinical nurse, nurse clinician and nurse co-ordinator. The number of roles, the

depth of skill required and the behaviour expected all change as the nurse progresses through the system.

This concept of career stages has also been proposed by Friss (1982) who introduces the typology of transient career, spiral development, steady state and linear careerists in nursing. Friss suggests that the transient career is associated with a need for independence; spiral development is associated with a need for growth; a steady state is characterised by a need for security; and linear careerists are motivated by a need for achievement. Friss argues that the merit of this typology is that the stereotyping of nurses as noncareerists can be directly challenged and that every hospital has a core of nurses who can be identified as careerists. Given this career typology as the basis for a new perspective, implications and promising new strategies for staff development can be seen.

Perhaps a more detailed developmental model in nursing is that offered by Cohen (1981). The Cohen model is based on Harvey, Hunt and Schroder's (1961) theory of concept development, the stages of which are thought to apply not only to childhood development but also to the accepting of new roles or progressing to new career stages.

Although the rate of progress through the stages of the professional developmental process may vary, one of Cohen's fundamental propositions is that "the nurse must experience each stage in sequence to feel comfortable in the professional role." (p 16.) Cohen asserts that in stage 1, Unilateral Dependence, the nurse is reliant upon external controls and adheres to the limit set by the authorities. "Concepts must be accepted without question from external sources because the nurse lacks the necessary experience and knowledge to criticise or question." (p 61.) In stage 2, Negative/ Independence, the development is characterised by a cognitive rebellion, a questioning of the concepts presented by authorities in an attempt to be free of external controls. The nurse develops the capacity for critical thinking and thus begins to sever the reliance on external authority. In stage 3, Dependence/Mutuality, cognitive rebellion is replaced by more

realistic evaluation of the environment and the nurse begins to integrate others' ideas. In stage 4, Interdependence, the need for independence and the commitment to mutuality are integrated and the nurse gains the capacity to exercise independence. The professional developmental process culminates with the integration of a professional role identity into the individual self-concept. Cohen asserts that satisfactory progression depends on the positive resolution of all four stages.

Benner (1982) considers that the complexity and responsibility of nursing practice today requires long-term and ongoing career development. She describes a five-level model of career development for nurses, novice, advanced beginner, competent, proficient and expert nurse. The levels reflect change in two general aspects of nurse's professional progression. One is a movement from reliance on abstract principles to the use of past, concrete experience as paradigms. The other is a change in the perception and understanding of a demand situation so that it becomes less a compilation of equally relevant bits and more a complete whole in which only certain parts are relevant. From the continuing education point of view, the major implication of this model is that any curriculum planner and mentor needs to recognise such aspects as readiness to learn, within which to offer guidelines for career and knowledge development relevant to various levels.

Benner's (1982) attempt to relate education to nurses' career stages is supported by Sovie, who concentrates upon job satisfaction and nursing retention. Sovie (1982) outlines a career stage model for hospital nurses and addresses the issues and challenges in the orientation and inservice education component of the model. Her developmental stage descriptions for nurses include three components - "professional identification", "professional maturation" and "professional mastery." (p 6.) Each component in the hospital nursing career model consists of different issues and concerns in nursing and includes major responsibilities for staff development educators. Each component also includes significant unresolved issues demanding new approaches and creative design

and development. The discussion addresses the redistribution of staff development resources in attending to those developmental stages and provides a forward view of continuing education programmes that are nurses' needs orientated.

More recently, a four-stage developmental model in nursing has been put forward by Etheredge (1985). Etheredge suggests that the nurse's grasp and exploration of her role parallels that of a person's individual growth and development. As with human growth, each stage presents critical tasks and distinct and observable role development that are universal. According to Etheredge, stage one, the dependency phase, is characterised by the nurse's need of support, guidance, and advice from nearly everyone. With uncertainty in her role, the nurse has a low tolerance for frustration. In stage two, the trying phase, the nurse identifies and develops her own nursing style. To establish her own nursing identity, she explores what works for her and what comforts her. She may rebel against authority and against the system to try to establish autonomy. Consistency is lacking in the nurse at this stage.

While the nurse is struggling to achieve consistency, her performance, reactions and even behaviour may not show it. In stage three, the integration phase, the nurse becomes comfortable with her identity as a nurse in which she has developed her own effective nursing style. In addition, she is aware of her strengths, weaknesses, and limits, all based on a more realistic view of herself.

With the final stage, the reminisce phase, the nurse's memories of old times enable comparison with past colleagues. Furthermore, this stage is characterised by the nurse's role as a mentor in which she offers a special kind of wisdom that comes from having lived through experiences that make her interesting and valuable to beginning nurses.

In summary, there is a solid body of opinion that the working lives of professionals such as nurses can be described by career stages. The theory of using age or career point

offers an alternative dimension in nursing and seems to provide a more practical research approach because of the ease of identification of the proposed stages by clearly measurable demographic characteristics such as age and length of nursing service.

However, from the researcher's point of view, the second developmental approach tends to offer more sophisticated conceptualizations of staging than the first age-related models. In addition, a major unresolved problem is that theories of stages based on age or career point tends to assume an inevitable progression through a nurse's career, whilst the theories related to stages as developmental tasks do not. There seems to be little doubt that some physiological changes dependent upon age usually occur during a nurse's career. However, earlier suggestions that most adult learning and mental capacities are age dependent have been thoroughly discredited in current adult learning literature as written by Kidd (1973) and Cropley (1977).

Perhaps Ryan (1979) provides an appropriate perspective on this dilemma. Ryan (1979) writes:

> "These studies suggest the need for different types of inservice and staff development at different career stages. However, they also suggest that there are different stage development inservice needs within groups ... Some participants seem to bypass stages, others do not progress as far in stages as do others." (p 4.)

In the present study, a decision had to be made as to how nurses' career/ development stages would be identified and classified. Although the researcher could select some career/developmental descriptors, such as early, middle and late career stages, there is a lack of consensus among nursing professionals as to the real differences and characteristics of these career stages. Consequently, there was insufficient guidance to discriminate between these career/developmental stages. Such uncertainty created a real research methodological problem. To overcome this difficulty, a Delphi technique was implemented. This technique will be described in a later chapter.

The use of career stages in this research can be substantiated on the additional grounds that in the health care system of New South Wales, there would always be a large population of nurses requiring continuing education. Thus, although career stage theories may only describe the characteristics likely for most nurses at that particular stage, there would always be a full range of potential options available for any nurse who was ahead or behind their peer group in actual needs and interests.

The fundamental point established by this review is that curriculum planners need to be cognizant of issues and needs at various career stages of nurses. The full range of personal and professional concerns needs to be identified and incorporated in the curriculum construction process for continuing nursing education.

3. Adult Life Stages

For most people, the activities of education, work, and leisure are distributed in a linear life plan. Stated simply, this means that people go to school in youth, work during their middle years, and retire in old age. This pattern of lifetime scheduling is the product of the natural dynamics of the human life cycle and the opportunities and constraints that have emerged within our societies. In terms of the life cycle, it is natural for a person to acquire physical and mental skills during youth, to assume a productive work role during the peak strength of middle life when family responsibilities are usually greatest, and finally withdraw from work demands as physical and mental vigour decline in old age.

One of the influences on life patterns is suggested by emerging theories on the developmental stages of adulthood. Over the last decade several scholars have proposed that adults pass through developmental stages the same as children and adolescents do. The literature review revealed a group of life stage theories that are not nursing specific. These represent sociological or psychological theories describing adults' changing needs and interests as they progress through the stage of adult life. While empirical research on

these developmental theories is inconclusive, there appears to be some consensus that most adults progress through successive phases of stabilization and consolidation followed by change and growth as they pursue new goals and confront the changing crises of different ages.

Reviewing literature, one notices these life stage theories could be categorized into age-based, which specify a time relationship of events, or developmental-based, which describe details in a sequence of events that could normally be expected.

Published works referred to age-based life stage include Gould (1972), Levinson (1974, 1978), Sheehy (1976) and Knowles (1979). These authors describe concerns, problems, and tasks that are common to most adults at specific age bands of their lives. For instance, Sheehy (1976) identifies five stages of adult development between the ages of 18 and 50, namely: "pulling up roots" (18-20) in which the adult leaves home and locates self in peer group, occupation and view point; "trying twenty" (20-30) in which the adult relates himself with external situation; "catching thirty" (30-35) in which the adult tears up what was done in 20's and in favour of new energies; "deadline decade" (35-45) in which the adult concentrates intensely on advancement; and "renewal or resignation stage" (45-50) in which the adult regains equilibrium and emphasis on friendship and privacy.

Similarly Knowles (1979) describes concerns and life problems of American adults in detail. Knowles proposes three stages of adult development: early adulthood (18-30), middle adulthood (30-65) and late adulthood (65 and over). Each stage has different concerns and problems relating to the issues of vocation and career, home and family living, personal development, enjoyment of leisure, health and community living.

All these sources propose similar patterns of development characterised by such terms as "provisional adulthood", "age thirty crisis", "mid-life transition", and "re-stabilization period", (Levinson, 1974). These terms represent peak periods of particular concerns

and interests of any professional worker-as-adult. The views of these theorists provide an important understanding; that any research attempting to examine nurse behaviour must include consideration of nurses-as-adults. As Levinson (1978) suggests, the basic purpose of this type of enquiry is "an interest in generating and working with hypotheses concerning relatively universal, genotypic, age-linked adult developmental periods within which variation occurs." (p 21.)

Yet there is an alternative approach to the same issue as that provided by developmental stage theorists. These theorists focus on a more abstract continuum than age-based theorists. They select different issues on which to base their sequences of change. There are those who select life events (Neugarten 1973, 1978; and Havighurst 1977); ego development (Erickson 1963; Daele 1968; Loevinger 1976; and White 1975); moral development (Peck and Havighurst 1970; Kohlberg 1973); and cognitive development (Harvey et al 1961; Hunt 1971; Oja 1974; and Sprinthall 1983); and whilst there are certainly differences in details and emphasis, there is consensus on the basic concept being presented - that adults are not similar in their concerns and interests over their life spans.

These developmental theorists provide guidelines for understanding and anticipating the rhythms of mental, physical and emotional development in adult interests and needs. They offer insight and understanding into the differences that occur, and life stages are a commonly used mechanism for clarifying their proposals.

Although a considerable theory base exists from which the needs of nurses as professional adults could be described by career or life stage theories, the literature review also reveals opposing viewpoints or suggestions for modification regarding these somewhat simplistic resolutions of complex issues.

The main opposition to the acceptance of stages of developmental change solely as the means of describing nurse needs can be considered at two levels, conceptual and methodological. The conceptual concerns emerge from theorists who argue that developmental stages are not the only type of change that would occur. They describe other elements that are stable and unpredictable to the adult personality, needs and interests. For example, Neugarten (1973) suggests three key "issues" in any adequate theory of adult development, namely (a) aspects of orderly and sequential change through life; (b) elements of consistency and change in personality over long periods of time; and (c) issues of antecedent-consequent relationships during a life span.

A broadly similar argument is advanced by Gergen (1977), who suggests that there are three approaches to understanding and explaining human development: (a) through patterns of stability-explicable through early experience based theorists such as Freud; (b) through patterns of ordered change-explicable through developmental based theorists such as Erikson; and through the non pattern of chance change, influenced by the biological nature of the human organism interacting with culture.

These two sources represent the major conceptual concerns revealed in the literature. Yet one can argue these theorists provide a perspective to utilize developmental theories rather than rejecting them in the construction of continuing education curriculum. Their value is to establish an awareness that there are other aspects of adult behaviour and needs than are provided from purely developmental considerations.

These concerns simply state that continuing education planners should anticipate some constancies of interest over career stages, as well as an element of unpredictability when interests and needs are probed in detail.

At the methodological level of concern, issues have been raised by sources critical of methodologies that involve professional adults diagnosing their own needs. For instance,

Coleman (1976) argues that it is an assumption that professional workers could readily identify their own needs; and the problem of diagnosing professional needs is not yet resolved. Coleman writes "what is clear is that individual's perceptions of his own needs is not a reliable guide, and that some diagnostic assistance is essential." (p 15.)

This concern is supported by Jones and Hayes (1980) through research which examines the accuracy of the technique of simply asking professional workers for their continuing education needs. These investigators compare results of subject statements of perceived need with the results of tests of same subjects' actual level of knowledge in the same sort of continuing education topics. It is their conclusion that "asking subjects what they want may not produce an accurate assessment of needs ... Subjects can express symptoms of needs but may not be aware of actual needs." (p 390.)

Jones and Hayes's view is supported by Brayne (1980) who reviews the literature on the problems of using subject needs assessments as the direct planning base for continuing education. He concludes that direct needs assessments are incapable of differentiating between the perceived needs of professionals and their felt needs. Perceived needs, which reflect what respondents think should be the skills or knowledge to be acquired, are distinguished from felt needs which constitute the skills and knowledge that the professionals feel they must have. Brayne interprets the difference thus: "... a response based on perceived needs does not provide the necessary readiness or commitment to acquire, develop and use these skills" (p. 3).

A more specific concern in nursing has been discussed by Orme and Trickett (1983). In researching the training needs of sisters and charge nurses, these authors find that nurses identify their problems and concerns easily. However, they have difficulty in suggesting the appropriate continuing education and training to help resolve them. There are further indications that the nurses' perceived needs bear no relationship to their educational needs.

All these criticisms provide a genuine dilemma for any researcher to select a valid approach. Yet as Ryan (1979) in his review of life stage theories concludes: "What do these types of studies suggest for staff developmental activities? ... First they suggest professional workers at different peiods, or years into their careers, have different needs. These studies suggest the need for different types of inservice and staff development at different life stages." (p. 4.)

Brayne (1980) provides further support in the decision to adopt a stage approach to nurse needs by stating:

> "There is a substantive body of evidence ... that suggests professional development planners should take the requirements, preferences, and needs of adults as the starting points for professional development activities." (p. 1.)

There is well documented evidence that continuing nursing education as it exists today does not generally meet the needs of most nurses. If we want to improve the quality of continuing education, the curriculum planner must learn to differentiate among the needs of nurses. They are not a homogeneous group, and their needs for additional training and support differ greatly. Although talking about stages of development tends to set up artificial categories, it can be useful in giving a general picture of movement and growth. Hence, despite the methodological concerns, the strength of integrating the career and developmental stage theories as an approach basis for developing continuing education curriculum outweighed these methodological difficulties. The developmental approaches appear to offer a better alternative to current technique in curriculum construction, with considerable and logical published support for their application.

4. Adult Learning - Andragogy

In her discussion of implementing continuing education, Popiel (1977) considers the purposes of continuing education for nursing personnel to be fourfold: (a) to gain

knowledge, skills and attitudes that will enable them to perform their jobs better; (2) to learn new nursing roles, techniques, or skills; (3) to provide for self development and professional growth; and (4) to show evidence of competence for re-licensure.

To put these purposes into a successful educational activity, it is necessary to develop a philosophy of continuing education that will provide learning activities for adults, and an environment that facilitates learning. There must be concern for the development of individuals, a sense of worth of every person, and faith that nurses will make the right decision for themselves if they have the necessary information and support. The philosophy must emphasise the release of human potential and not the control of human behaviour. The personnel involved in continuing education must believe in the concepts of andragogy, the term referring to the art and science of helping adults learn. Andragogy is distinguished from pedagogy, the art and science of teaching children.

Although, as Dressel and Thompson (1973) claim there are "few areas in education today....so widely eulogised; ....so little understood, so loosely defined, and so inadequately researched as adult learning" (p vii), there has been a growing body of research and theory on adult learning. Sources such as Bischof 1969; Goulet and Baltes 1970; Long 1971 and 1973; Kidd 1973; Kaluger and Kaluger 1974; Cropley 1977; Knowles 1972, 1975, 1978 and 1979; Miller and Verdnin 1979 and Peterson 1979 have provided an operational concept labelled andragogy as distinguished from pedagogy.

For instance, Kidd (1973) puts forward five concepts: life span, maturation, adult experience, self-learner and time, as guidelines for the investigation of the key differences among adult learners. Miller and Verduin (1979) delineate the differences of andragogy and pedagogy through the concepts of heterogeneity, structure and maturity.

Perhaps the most significant attempt made to characterise what adult learning is, has been provided by Knowles, who stands out as the major contributor in the theory of adult

learning. Knowles (1975) describes adult learning as: "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. This actually takes place not in isolation, but in association with various kinds of resources, i.e. teachers, mentors, peers and other human resources." (p. 15.)

Knowles (1979) differentiates andragogy from pedagogy through reference to changes in self-concept, the role of experience, readiness to learn, and orientation to learning. These are worthy of detailed report here.

According to Knowles (1979), change of self-concept implies that as a person grows and matures his self- concept moves from one of total dependence (as is the reality for the infant) to one of increasing self-directedness. Andragogy assumes that the point at which an individual achieves a self-concept of essential self-direction is the point at which psychologically he becomes adult. A very critical thing happens when this occurs: the individual develops a deep psychological need to be perceived by others as being self-directing. Thus, when he finds himself in a situation in which he is not allowed to be self-directing, he experiences a tension between that situation and his self concept. His reaction may well be tainted with resentment and resistance.

It is Knowles' observation that those students who have entered a professional school or a job have made a big step toward seeing themselves as essentially self-directing. They have largely resolved their identity-formation issues; they are now identified with an adult role. Any experience that they perceive as putting them in the position of being treated as children is bound to interfere with their learning.

In relation to the role of experience in adult learning. Knowles believes that as an individual matures he accumulates an expanding reservoir of experience that causes him

to become increasingly attuned for learning and at the same time provides him with a broadening base around which new learning can be associated. Accordingly, in the technology of andragogy there is emphasis on the transmittal techniques which tap the experience of the learners and involve them in analysing their experience. The use of lectures, audio-visual presentations and assigned reading tend to fade in favour of discussion, laboratory, simulation, field experience, team project, and other action-learning techniques.

In addition, there is another, more subtle reason for emphasizing the utilization of the experience of the learners. A young child identifies himself largely in terms of external definers - who his parents, brothers, and sisters are, where he lives and to what school and church he goes. As he matures, he increasingly defines who he is by his experiences. For Knowles, a child's experience is something that happens to him; to an adult, experience is who he is. So in any situation in which an adult's experience is being devalued or ignored, the adult perceives this as not rejecting just his experience, but rejecting him as a person. Andragogues convey their respect for people by making use of their experience as a source of learning.

In regard to readiness to learn, Knowles suggests that as an individual matures, his readiness to learn is decreasingly the product of his biological development and academic pressure and is increasingly the product of the developmental tasks required for the performance of his evolving social roles. In a sense, pedagogy assumes that children are ready to learn those things they ought to because of their biological and academic development, whereas andragogy assumes that learners are ready to learn those things they need to because of the developmental phases they are approaching in their roles as worker, spouses, parents, organisational members and leaders, leisure time users, and the like.

Furthermore, Knowles points out adult and child also differ in their orientation to learning. The assumption is that children have been conditioned to have a subject-centred orientation to most learning, whereas adults tend to have a problem-centred orientation to learning. [Note that this author is presenting the assumption by way of explanation, not in order to defend it on Knowles' behalf.] This difference is primarily one of time perspective. The child's time perspective toward learning is one of postponed application. The adult, on the other hand, comes into an educational activity largely because he is experiencing some inadequacy in coping with current problems. He wants to apply tomorrow what he learns today, so his time perspective is one of immediacy of application. Therefore, he enters into education with a problem-centred orientation to learning.

Hence, some core concepts of andragogical theory have emerged, namely, that adults as learners have a psychological need to be self-directing; that their richest resource for learning is the analysis of their own experience; that they become ready to learn as they experience the need to confront developmental tasks; and that their orientation towards learning is one of concern for immediate application.

The concept of andragogy has also been well applied in nursing education. Dickinson (1973) observes the learning accomplished by an adult depends upon a complex variety of factors including the physical situation, the subject matter, the instruction provided, and the characteristics of the learner himself/herself. Rosendahl (1974) supports the andragogical approach to nursing education, noting that not only does it encourage nurses to think, but also stimulates and facilitates significant, self-directed learning. Clarke and Dickinson (1976) add the point that nurses' motives, attitudes and certain socio-economic characteristics influence their level of participation in the adult-learning process. Cooper (1978) also suggests that there is no preconceived format in the adult learning process but that success depends upon clearly defined goals, identification of learning needs and a reasonable plan to achieve the goals. All these views clearly indicate that the separately

identifiable adult learning process is an important and necessary professional activity in continuing nursing education.

A review of Houle's (1964) pioneering in-depth investigation of twenty-two learners sheds further insight about purposes and values of continuing education as perceived by adults. Houle finds that his subjects could be fitted into three categories. Firstly, there are goal-oriented learners, who use education for accomplishing fairly clear-cut objectives. These individuals usually do not make any real start on their continuing education until their middle twenties and after. Secondly, there are activity-oriented learners, who take part because they find meaning in the process rather than in necessary connections among the content and the announced purpose of the activity. These individuals also begin their sustained participation in adult education at the point when their problems or their needs become sufficiently pressing. Thirdly, there are the learning-oriented, who seek knowledge for its own sake.

One essential idea that has emerged from Houle's work is that nurse-as-adult does not learn, think, or react in the learning process in a single, simple way. Rather, as Newton (1977) suggests, nurse-as-adult learner is an autonomous, experience-laden, goal-seeking, novelty-oriented and problem-centred individual; hence continuing education curricula must allow such individuals to select the content and process of learning. Content and process must be based on individual needs and interests. Thus, the adult education process needs to set up operations to put these learning principles into practice. The adult educator must be able to diagnose nurse learning problems and there must be a mechanism for real mutual planning in curriculum design. A programme that nurses perceive to be imposed on them from the establishment is precisely in conflict with the concept of adult education. The starting point in the diagnostic process is what the nurses think they need at this point. Nurses have their own concepts of the knowledge, skills, attitudes and understanding needed; differences and priorities can be worked out through negotiation. Continuing education curricula must satisfy the diagnosed needs. As Jordan

(1975) suggests, it should be evident that to maintain an interest in learning, the adult student, rather than the programmer *per se,* is of central concern. Emphasis should be on the learning process through which content is conveyed; the content takes its cues from the learning needs and interests of the student. Thus andragogy adds additional argument for adopting a nurse needs base for the planning of continuing education curricula.

The concepts offered by andragogy provide a direct linkage and support for this researcher's belief in using developmental stages as the focus in specifying the needs of professional adults such as nurses. The researcher's position is further supported by Lowe (1975). As Lowe points out, "The implications of andragogy for education are obvious. We might best summarise them by advising adult educators to spend much time studying the rhythm of mental, physical, and emotional development of their students as do child psychologists and pedagogues in the primary school". (Lowe, 1975, p. 51.)

This position is also supported by Newton (1977) who claims that the adult's readiness for learning is inherent in his societal role as worker, parent, spouse, organisation member and the like. Since need is basic to want and readiness, the requirements and demands of the adult's prevailing circumstances and aspiring roles in real life must dominate and supersede all other considerations in andragogy.

Even more specific support in using developmental stages as the focus of adult learning is provided by Knowles (1979). Knowles writes:

> "The critical implication of adult learning is the importance of timing learning experiences to coincide with the learners' developmental tasks. It is my observation that a good deal of professional education is totally out of phase with the students readiness to learn". (Knowles, 1979, p. 57.)

Thus, there are substantive opinions that adult education requires a new theory that takes into account physical, mental, emotional, social, spiritual and occupational development through the life span; that explains learning as a process of inquiry and illuminates the

competencies necessary to engage in this process; and that provides guidelines for performance of the new roles required to facilitate that process. The characteristics of adult learners must be borne in mind by those who plan continuing education curricula for nurses. If the needs of the nurse participants have been correctly identified, the curriculum content falls into a pattern quite easily. Major consideration in curriculum design must therefore be given to the adoption of a multi-facets approach to provide ample time and opportunity for each nurse participant to express herself - to ventilate, procrastinate, or penetrate her legitimate problems and concerns. Curriculum planners need to be flexible in their approaches. They must be sensitive to nurses' needs and prepare to adjust communication pathways as needed. In addition, they must be willing to consider new kinds of content and experiment with innovative approaches in curriculum construction.

5. Motivation in Continuing Nursing Education

A major problem often faced by continuing nursing educators concerns motivating nurses to participate in continuing education offerings. Nurse educators often report that nurses eagerly attend particular offerings, such as management classes, whenever these are available, regardless of the immediate applicability of the information to the nurse's practice setting. They report that attendance improves if an incident in the clinical setting prompts a need for learning, such as evidence of rising staff back injury due to faulty lifting techniques. However, participation in a variety of continuing education programmes initiated by continuing nurse educators is most often limited unless mandated.

The motivation problem goes far beyond encouraging nurses to attend continuing education programmes. Once they are there, the nurses must be motivated to active learning. Following the programme, they must be motivated to apply in the practice setting the new knowledge and skills gained. Thus, three problem areas exist in relation

to motivation in continuing nursing education: participation, active learning and application.

It is not enough for a nurse to apply her knowledge and skills in her professional duty, she must also be sufficiently interested and motivated to perform it, or she will not carry out her duty effectively and will not find it satisfying. Argyle (1977) considers effective performance is a joint product of abilities and motivation. French (1978), in similar vein, further claims that the ability to solve problems is a function of both intelligence and achievement, the effect of intelligence being greater for more highly motivated subjects, which shows that the relationship is multiplicative. The strength of motivation in turn depends both on an individual's enduring drive strength and on the incentive conditions. Both the choice of occupation and the choice to perform well are products of incentives and drive strength. The amount of satisfaction is a product of the motivation and rewards obtained.

Hence, the issue of motivation is important for the nurse educator as it can provide guidelines and background in which continuing nursing education curriculum can be constructed.

Reviewing literature, one notices that current approaches to the study of motivation have their conceptual bases in the world of business rather than nursing and essentially are a specialised application of the theories of incentive and motivation applied to a work setting. In general, such approaches have examined the effects of rewards on people in various organisational settings. Specific nursing applications have occurred only recently.

Two basic orientations have persisted through the various theories of incentives and motivation: the first is that people will respond as individuals to external reinforcements provided by organisations (extrinsic rewards oriented; the second is that individuals will

act to satisfy their inner needs, interests, and drives (intrinsic motivation oriented) - often from the basis of some form of self image.

Typologies such as the much-explored Getzels-Guba (1957) social system model of organisational behaviour have provided the persepective that organisations (and their people) in action really consist of two interrelated and sometimes competing characteristics:

1. the organisational (nomothetic) requirements which create organisational expectations of task achievement to satisfy organisational goals;
2. the personal (idiographic) requirements which represent the needs of people in the organisation to attain their personal satisfactions and interests.

These two characteristics provide a framework in identifying the purposes of incentive and motivation in job satisfaction theories. Incentives represent the external inducements or rewards created by the formal organisation to cause the individuals to work toward the goals of the organisations. Conversely, motivation represents the forces generated by the internal needs and drives of the people in an organisation. These motivational forces can in part be generated by outside factors, but they appear intrinsic to the individual in that the actual resultant forces are created by an internal process based on the needs structures of the individual. In fact, Hay and Miskel (1978) define motivation as:

> "... the complex of forces, drives, needs, tension states, or other internal psychological mechanisms that start and maintain activity toward the achievement of personal goals ... work motivation is considered a sub-classification of general motivation." (p. 96.)

This distinction between incentives (extrinsic rewards) and motivations (intrinsic rewards) is useful in reviewing theories of incentives and motivation as they apply in work settings. Historically, these theories have provided the basis of job satisfaction studies and can be grouped into three categories on the basis of their emphasis: early theorists who focus on the effects of incentives (Taylor 1912; Barnard 1936; March and Simon 1958); later theorists who emphasise motivational effects (Maslow 1954; Argyris

1965; and Herzberg 1966); and current theorists who attempt to specify some type of interrelationship between the two concepts (Festinger 1957; Adams 1971; Vroom 1964, 1971; and Miskel et al 1975). These classifications probably reflect what Handy (1976) describes as the three "eras" of administrative thought. Though overlapping at times, the initial era of scientific management emphasises on "economic man" responding to external (monetary) incentives; then the "human relations" era which focuses on the individual people in organisations; and, finally, the "integrative" era which attempts to provide conceptual frameworks to explain the dynamic relationships between people and their organisation.

The early theorists represent the scientific management era with its emphasis on external incentives. For instance, Taylor (1912), by combining time and motion study with wage incentives, demonstrated that one can bring about better co-operation between employers and workers. Taylor suggested that when external incentives are properly applied, and when a sufficient amount of time has been given to implement the principles of scientific management, a larger output per man as well as an output of a better and higher quality, will result.

Similarly, Barnard (1936) viewed incentives as a mechanism for obtaining individual effort. This mechanism comes in positive and negative forms. He suggests that one of the executive's tasks is to increase satisfactions and reduce dissatisfactions through the use of incentives. Barnard developed the construct of "individual equilibrium" to describe behaviour in organisations and the effect of incentives on employees. In this concept, there is a balance between inducements provided by the organisation and the effort put in by the employee, which acts to provide the individual with either a surplus or deficit of satisfaction. The employee's work attitude is the result of this surplus or deficit.

Barnard's construct has been extended further by March and Simon (1958) in their concept of employee participation in organisation. March and Simon develop an economic argument using monetary measures to balance inducements (incentives and other organisational factors of production) against the contribution of the individual to the organisation. They propose an "inducement-contribution scale" which reflects an individual's current equilibrium between incentives offered and effort produced. In their judgement, job satisfaction and willingness to work are reflected by this balance.

In essence, March and Simon have extended incentive theory conceptually by proposing that an individual's perception of his work is in part unrelated to economic market conditions; that rewards have different importance to different individuals; that communication problems distort the meaning of incentives; and that human irrationality and complexity are partial causes of the unpredictability of the effects of an incentive.

Hence, March and Simon show the importance of an individual's interpretation of organisational actions such as an incentive, and the subsequent inability of the employer to predict accurately the effects of an organisational incentive (such as continuing education) across a total group of employees.

A somewhat different approach has been adopted by other theorists who represent the human relations era with its emphasis on motivational effects. Influential works by Maslow (1954), Argyris (1965), and Herzberg (1966) can be cited as useful examples.

Maslow (1954) claims that the reason why people join organisations, stay in them and work towards their goals, is a hierarchy of human needs. He applies this framework of hierarchy of needs to clarify the relationships of values to the relative value of motivators. Maslow identifies five basic needs, postulating that the satisfaction of basic physiological needs triggers the emergence of social and psychological needs. Needs are presented in a specific order with each successive need being dependent upon partial fulfilment of

preceding need. This need hierarchy in ascending order of satisfaction consists of first order basic needs (physiological, safety, belonging and love needs) and the secondary needs (esteem and self actualisation). Maslow points out that although the order of his needs hierarchy is presented in a fixed order, it ought not be applied rigidly. The most common exception to his order occurs when self esteem seems to be more important than love. Other exceptions include lowered level of aspiration, individuals with psychopathic personalities and those with such high ideals or values that they are willing to give up everything for the sake of their ideal.

Maslow stresses the role of environment as the key to individual need satisfaction. If the environment prevents lower order needs from being satisfied, then higher order needs - particularly self actualisation - become difficult to achieve. An important corollary is the idea of need regression, in which Maslow proposes that a person operating at a high order of need fulfilment would revert to more basic behaviour patterns if deprived of a more basic need.

In his later work, Maslow (1964) further introduces the two concepts of "becoming" and "being". "Becoming" is the process of achieving satisfaction in first order, basic needs, whilst "being" is associated with psychological growth towards higher order need levels and self actualisation. Both processes require input from the environment. However, Maslow views "becoming" as a result of experiencing personal deficit, whilst "being" is a personality expansion process.

Maslow, as a seminal motivation theorist, provides a frequently used construct in current theory - the needs hierarchy concept. His ideas also extend understanding of incentive theory by explaining that organisations could provide - or fail to provide - the work environments in which personal motivation could develop and psychological growth occur.

Other work that commands attention on motivational effects includes that of Argyris (1965). Argyris focuses on the effects of organisational life and individual motivation. His thrust is the development of structures and control systems designed to build consistency between organisational goals and individual values. His ideas can be described in terms of "social conflict". He considers that individuals have their own personality and goals and, as organisations have their needs and goals, these two are often incompatible in a number of ways. He observes the main factors in this conflict as: the degree of self actualisation of the individual, the degree of interpersonal competence of his organisational peers, and the nature of the organisation itself.

He proposes, therefore, that the solution to these dilemmas depends upon revising job approaches that provide opportunities for job enrichment and worker involvement in decision making, so that individuals can set their own goals and achieve psychological success and the relative independence and autonomy of an adult.

Argyris criticises many apparent incentives, especially economic ones, as dysfunctional because they are not directed towards satisfying appropriate needs in workers. He further suggests that relevant organisational incentives could emanate from worker involvement in decision making. If necessary, organisations should rethink both their structure and approach to enable individual growth towards self actualisation to occur.

Argyris' contributions highlight the dependency of an organisation on employee voluntary actions to achieve high levels of organisational commitment by individuals and the importance of organisational efforts to accommodate the genuine needs and interests of employees. Extending Argyris' concept further into continuing nursing education, one can argue that the success of any programme depends on nurses' voluntary actions and participation in decision making to achieve high levels of commitment. Efforts have to be made to accommodate the genuine needs and interests of nurses.

Herzberg (1959, 1966) extends the concept of motivation further in his two-factor theory. Using a critical incident technique in which 200 engineers and accountants in Pittsburg were asked to recall a time when they felt exceptionally good about their jobs, a set of ten factors was derived. Achievement, recognition, work itself, responsibility and advancement were labelled motivators. Motivators, focusing on the job itself, were not mentioned often during episodes of low feelings about the job. In addition, motivators tended to deal with the content of the job rather than the environment in which the work was done. Hygiene factors, on the other hand, were related to the environment in which work was performed and included company policy and administration, supervision, salary, interpersonal relations and work conditions.

Herzberg observes that attention to hygiene factors will only aid in preventing many of the negative results of low morale. An over emphasis on hygiene factors, he notes, leads to an increasing focus on the context of the job, the effect of which tends to be short range. He proposes that emphasis be placed on strengthening motivators that relate to job content, as they offer the potential for a longer range effect. He concludes that factors involved in producing job satisfaction - motivators - are separate and distinct from those leading to job dissatisfaction - hygiene factors - as proposed in his initial hypothesis.

Herzberg (1966) elaborates these two factor concepts further by describing two different and characteristic "types" of people, whose major need fulfilment is through <u>one</u> of these two categories of needs - motivation (satisfaction) needs or hygiene (dissatisfaction) needs.

Hence, in an extension of Maslow's need hierarchy concept, Herzberg offers a different dimension in understanding how people are motivated to work. Hodgett (1975) provides a succinct comparison of Maslow and Herzberg concepts. In this comparison, he relates Maslow's safety needs to Herzberg's factors of company policy and administration, job security and working conditions; and Maslow's social needs to Herzberg's interpersonal

relations and supervision. The last two needs cited by Maslow, esteem and self actualisation, are compared with Herzberg's motivators as follows: Maslow's esteem needs are compared with Herzberg's advancement, recognition and status; and Maslow's self actualisation needs are compared with Herzberg's work itself, achievement and possibility of growth. Using this comparison, the attempt to determine the value of employment inducements is provided with a more complete theoretical base.

Different from the scientific management and human relationship approach, the current theorists on motivation represent the integrating era with its emphasis on relationships between incentives and motivation. For instance, Festinger (1957) advocates the concept of "cognitive dissonance" which involves the balance between the internal perceptions and external realities in a person's cognition (understanding) of his world. The theory proposes that a person experiences dissonance (discomfort) when he/she has logical but inconsistent cognition about an event or object. It is this dissonance that motivates a person to reduce discomfort through cognitive or attitude change.

In a sense, Festinger provides a more conceptually abstract version of the March and Simon "inducement-contribution" theory discussed previously. The "cognitive dissonance" concept can be used to provide insight into the probable relationships between incentives and motivation and why the effect of incentives could be different from individual to individual. Festinger's theory also provides the developmental link leading towards the inequity approach subsequently used by Adams (1963, 1971) and introduces a version of a distinctive feature of current theories - the concept of a dynamic relationship between extrinsic and intrinsic factors.

Adams (1963) extends Festinger's idea of "cognitive dissonance" by introducing the concept of "social inequity". This concept described the residual attitudes of people after some sort of social interaction has taken place. As a consequence of that interaction, at least one of the parties involved feels that some inequality (inequity) has resulted.

Adams further develops the inequity concept through examining wage situations and concludes that a cognitive exchange process occurs in them. He observes that each person in a work situation perceives input and output through his own perceptual viewpoint. Inequity occurs when different value judgements are made of some situation by the various individuals involved. For example, an employer may perceive a salary increase as an adequate reward, whilst the employee regards a salary increase as inappropriate and really expects some other form of rewards such as recognition and higher status. Hence, the resultant inequity is derived from the different perceptions, value systems, and expectations of the participants involved.

Inequity theory indicates the importance of both the internal and external factors in an employee's work relationships and attitudes, and stresses the mediating effect of the perceptions and value systems of the individual concerned. This concept is followed by Vroom (1964, 1971) who advocates the "expectancy theory". In essence, this theory is based on three concepts: expectancy, valence, and instrumentality.

According to Vroom, expectancy is the belief held by an individual that his/her efforts would lead to a successful performance, i.e. a subjective judgement of future outcomes. Valence is the degree of attractiveness or desirability that an individual attaches to a reward and is really definable only when an individual decides what is wanted from a job. Instrumentality is the belief that a given performance is essential for obtaining a particular reward or satisfying a particular valence. In this sense, instrumentality represents the individual's perceived correlation between doing a good job and receiving rewards.

The basic relationship proposed by the expectancy model is that motivation, the propensity to commence and maintain behaviour, is the product of expectancy, valence, and instrumentality on a multiplicative and interactive basis. In this approach, performance is not an end in itself, but a means to achievement of a personal goal or personal satisfaction or other rewards.

Hence, in applying these notions of motivation to continuing nursing education, three broad conceptual frameworks emerge. There is the "incentive" view which suggests that determinants of the nurse's satisfaction and motivation reside in the external rewards systems and that the nurse will increase his/her efforts in order to obtain a desired reward. There is the "intrinsic" view which emphasises that determinants of motivation lie in the characteristics of the programme itself, and the view initiated from some general assumptions about human needs, along lines originally advocated by Maslow. Finally the "interactionist" view concludes that motivation is a complex interplay between the nurse and her work, in that what it does depends upon subjective judgement about expected outcomes of performance.

This conceptual distinction, between externally imposed organisational incentives and individually generated motivational requirements, provides a useful insight for any curriculum planner in developing continuing nursing education programmes. Using this distinction, traditional continuing nursing education has tended to be an incentive in most hospital systems as it is either offered to or imposed upon nurses by the organisation.

The curriculum planner, therefore, needs to be cognisant of the fact that the nurse has a set of results that she expects from continuing education, results that will satisfy certain of her needs and in return for which she will expend some of her skills and expertise. Similarly the planner needs to recognise that the organisation has its set of expectations of the nurse and its list of priorities and that motivation will happen when the expectations as viewed by the organisation and by the nurse are the same. Hence the function of the curriculum planner is to provide an educational experience which minimises the difference between organisational requirements and personal needs. Many of the current criticisms of continuing education can be restated as being incentives that are too far removed from the actual motivational needs of nurses.

6. Job Satisfaction in Nursing Settings

Nurses today are more dissatisfied than ever before. Published works such as by Kramer and Baker (1971), Donovan (1980), Hallis (1980) and Wandelt et al (1981) clearly indicate that being bogged down with non-nursing demands, nurses are faced with insufficient job challenge, lack of recognition, poor working conditions, low salaries and limited opportunities for professional growth counselling and development experiences. This perceived inability to determine and direct their professional futures lead to high turnover rates and a poor sense of achievement. Although "stress overload" and "burnout" are forever given as reasons for increased mobility and temporary or even permanent withdrawal from nursing, a survey by Johnson (1980) indicates that boredom, perceived lack of administrative support and indecision about personal and professional goals are also important factors.

There is no blinding revelation in the statement that nursing is a female profession. In fact Blatch (1979) reports that more than 98 percent of the registered nurses in New South Wales are women and that the proportion has not changed demonstrably in many years. To what extent does the fact that nursing is predominantly female create problems for the nursing service? The answer, as most of the administrators recognise, is that it tends to create problems for almost every aspect of organisational life, from recruitment to resignation and from probation to promotion.

Women's liberation notwithstanding, the working woman, almost without exception, has a competing career - that of homemaker. In Argyris' (1962) framework, this creates conflict between the individual's goals and the organisation's goals. Although such conflict is problematic in any profession, it is particularly acute in hospital nursing because of the 24 hour nature of the work involved. As McClure (1983) suggests, the need to employ professionals who are available in the evening, at night, on weekends and holidays is only too well understood - better understood by nurse administrators than by

husbands, fiances, children and assorted significant others. The 24-hour demand makes nursing in inpatient settings unpopular, in spite of the fact that more than 60 percent of all nurses in Australia are employed in hospital and nursing homes.

Along with the problem of difficult hours is the fact that nursing is very hard. Unfortunately, in recent years published works tend to emphasise only the intellectual side of the nurse's role. Often, the profession has down-played and even ignored the physical labour that is entailed in delivering most patient care. For women, who must leave their work at the end of the day and go home to their second career, the physical demands may simply make it impossible for them to do both jobs well.

The disadvantages in the nurse's job are confirmed by the Report of the Committee on Nursing (Briggs Report, 1972). The Report points out that low pay, long hours of work and the lack of social status of the nursing profession are at the root of nurses' disenchantment with their job. Apart from the extrinsic factors, there is an attitude in the community which expects nurses to be idealistic in their job; an expectation not demanded of people in many other occupations. Instead of support for the nurses' selfless approach to their duties, the community at large exploits their commendable involvement and also wants nurses to make economic and social sacrifices. The Report's view is that the profession is overworked, underpaid and still seeking long overdue recognition. Unless the profession of nursing is brought into line with other professions in terms of status, labour turnover amongst nurses is likely to increase. The Report also demands a radical change in the working conditions of nurses and facilities for nurses to participate in further education.

Argyris (1962) would regard the situation of competing careers as problematic for the organisation, but not impossible. His theory, discussed previously, would suggest that efforts be made to find new approaches that would make it possible for nurses to be employed in hospitals and still meet their individual personal needs. It then becomes

incumbent upon the employer to devise strategies that enhance nurses' job satisfaction and meet their other needs. In addition, as Timmreck and Randall (1981) point out, health care organisations concerned with the quality of life in general, should also maintain a profound interest in the quality of an employee's work life aside from any primary concern with the individual as a patient.

Hence there are convincing opinions that, in an effort to avoid the negative aspects of the nurses' job, a mechanism has to be introduced to help today's nurses meet their needs and enhance their job satisfaction. After all, as Stubbs (1977), Stember et al (1978), Slavitt et al (1979), and Walker and Bronstein (1981) all claim, it is a personal as well as a management goal in every profession to maximise job satisfaction.

The nursing literature is replete with articles on factors that influence job satisfaction for nurses. A number of studies have been conducted to examine nurses' perceptions of job satisfaction and the relationship between patterns of individual needs and job satisfaction. Regrettably, most of these studies are conducted in America (Duffield 1965; Porter 1968; Cleland et al 1970; Slocum et al 1972; Seyfried 1972; McClosky 1974; Plawecki and Plawecki (1976; Grandjean et al 1976; Marriner and Craigle 1977; Slovett et al 1978; Carson 1981; Froebe 1983) with little research being conducted on job satisfaction of Australian nurses. The following literature review provides an overview of major studies carried out in nursing since the 1960's.

Duffield (1964) investigates the turnover of nursing faculty in accredited generic baccalaureate programmes of the National League for Nursing, located in the North Central Region between 1954 and 1962. In a survey of 190 full-time, nonadministrative salaried nursing faculty, who terminated their employment during that period, marriage and home responsibilities were identified most frequently as reasons for faculty turnover. However, employment dissatisfaction was the major cause of employment severance among the respondents with professional rank. Duffield also finds that in no instance is a

salary a single determinant in the decision to leave employment, although a better salary offer is found to be of some significance in job severance.

Porter (1968) conducted one of the most comprehensive studies concerned with job satisfaction of nursing personnel, utilising Maslow's hierarchy. He adjusted Maslow's original hierarchy of needs by adding an autonomy need and deleting the physiological need. This change was supported by his belief that within the United States, most individuals' physiological needs are well enough met. Autonomy was defined as the nurse perception of the degree to which she makes or contributes to decision making and goal setting at work. Porter's finding was supported by Slocum et al (1972) in their analysis of job satisfaction among professional nurses in comparison to nonprofessional hospital personnel. Slocum et al reported a significant positive correlation between job satisfaction of professional nurses and their sense of self-actualisation as related to job performance.

Another attempt to view nurse job satisfaction was provided by Cleland et al (1970). These researchers studied the problem of identifying nurse inducements and concluded that:

1. increased vacation is more highly valued than a salary increase;
2. part-time scheduling is highly valued by evening staff;
3. full-time administration nurses prefer day shift;
4. younger nonadministrative nurses express interest in further education, and
5. permanent unit assignments are preferred to relief assignments.

Maslow's theory of motivation has provided the focus in the McClosky (1974) study of 94 nurses employed in a hospital setting. Data were collected using a questionnaire that asked registered nurses to rate specific work incentives afforded them as hospital nurses. Using this research approach, McClosky noted that psychological rewards such as recognition, career advancement, participation in research and further education

consistently outweighed social rewards such as child-care facilities and social contact with peers. This finding confirms both Maslow's and Herzberg's work on the importance of motivators to job satisfaction. McClosky concluded that internal rewards (facets of the work itself) influenced retention and that external rewards (salary, fringe benefits) were important attractors when nurses consider a new job.

A number of studies have utilised the theoretical frameworks that differentiate intrinisc from extrinsic rewards, the former reflecting potential psychological benefits deriving from the nature of the work itself and the latter reflecting economic benefits, environmental conditions, and policies. Adopting this two-factor approach, Seyfried and Franck (1972) found that nursing educators at a midwest university considered that opportunity to advance their knowledge, to have acceptable teaching assignments, to have good clinical facilities and congeniality of colleagues were the most important factors influencing their job satisfaction. Plawecki and Plawecki (1976) in their study of nurse educators in Iowa also confirmed that in attracting faculty, intrinsic factors, particularly the nature of the work, were more important than extrinsic factors such as policies, salary, interpersonal relationships and working conditions.

Grandjean et al (1976) examined 21 characteristics important to nurse faculty in four university schools of nursing in the Gulf, Midwest, Central and Western Regions. Teaching, supportive colleagues, keeping clinical knowledge current, and faculty autonomy were seen as the most important aspects of the job by the 154 nursing educators surveyed, while salaries, fringe beneifts, and other extrinsic rewards ranked substantially lower in importance. Satisfaction with the more important conditions was generally low, with lack of faculty participation in decision making a particularly noteworthy source of dissatisfaction. Importance and satisfaction ranking of the 21 characteristics was fairly stable across the four schools and across groups broken down by marital status, experience, and other personal attributes. Increased professional autonomy, it is suggested, would benefit faculty morale, recruitment, retention, and

overall effectiveness in nursing education.

In a factor analytic study to determine nursing educators' perception of the general importance of given job characteristics to job satisfaction, Marriner and Craigie (1977) found that nursing educators ranked intrinsic factors such as responsibility, achievement, academic freedom and autonomy as more important than extrinsic factors such as faculty club, lounge, and dining room. The nurse educators tended to be more satisfied with the reputation of the school and their job security and less satisfied with promotion policies and class size. Open organisational climate was correlated with satisfaction about numerous job characteristics. Conversely, closed organisational climate was correlated with dissatisfaction about those variables. The more generally satisfied a person was, the more likely that person was to remain with the institution. Conversely, a generally dissatisfied individual, if not satisfied about those variables, was more likely to leave the institution. The characteristics of being a young, junior faculty member were correlated with planning to leave a first position because of dissatisfaction. Marriner and Craigie concluded that these educators tended to be dissatisfied about things they judged important and satisfied with things they did not feel important.

A work satisfaction scale for registered nurses has also been developed by Slovett et al (1978) following two years of research. The scale uses the following six components of job satisfaction: pay, autonomy, tasks requirements, organisational requirements, interaction opportunities, and job prestige or status. The rationale underlying the production of this tool is of primary interest to the current research endeavour. This rationale includes the assertions that:

1. previous research modelled after Maslow's work suggests that self-actualisation is the most important need, yet many jobs in the health sector do not provide a climate for its achievement; and

2. research application of Herzberg's satisfiers, interpersonal relations and status, for ascertaining job satisfaction has not been particularly helpful in most situations.

Slovett et al suggest this is because there are limits to the administrator's range of control which in turn, narrows the manager's field in attempts to elevate job satisfaction among the ranks of nursing.

Similarly in their study to measure nurse responses to team nursing and primary nursing care delivery models, Carson and Mally (1981) developed a questionnaire with items compiled from job satisfaction literature dating from the 1930's to 1980's. Data collected from 115 primary care delivery system nurses and 65 team nursing care delivery system nurses revealed that, overall, primary care delivery systems provide nurses a greater level of job satisfaction than do the team nursing delivery systems. Respondents perceived the primary system to offer more opportunities for self-fulfilment, decision making and independent judgement. The nurses, although responding positively about primary nursing, were still dissatisfied with the low prestige they felt attached to the job. Carson and Mally's findings support Herzberg's finding concering work motivations.

Froebe et al (1983) conducted a job satisfaction study using 928 registered nurses and administrative nursing personnel employed in three teaching hospitals in American Midwest. Questionnaire items checked the importance of selected hygiene and motivators to nurses at the time of choosing their profession and the degree to which these motivators and hygiene factors were met once employed at the hospitals. Results indicated five hygiene factors (shift assignment, educational opportuntiies, supervisor and co-worker relationships, and salary) and five motivators (accomplishments, recognition, accountability, working in clinical area and RN-Patient ratio) were ranked as very important by more than 90% of the respondents. However, the same respondents noted nine items representing hygiene factors (convenient distance to travel, salary, parking lot

security, clinical ladder, day care facilities, fringe benefits, i.e. vacation, insurance, tuition reimbursement, management style, geographical location of hospital and relationship with immediate supervisor) and four items representing motivators (chance for advancement, evaluation system, recognition for job performance and RN-Patient ratio) that had seldom or never been attained.

Froebe et al concluded that dissatisfaction with salary, advancement and fringe benefits creates speculation that registered nurses regard their impact upon the organisation to be greater than the rewards accorded to them by the organisation. If Simon's (1958) theory is correct, notably that participants should feel sufficiently positive about the reward system to want to remain in the organisation, there is a basis for turnover in these hospitals.

Munro (1983), as part of her research, reviews studies carried out by Herzberg (1966, 1968); Whitsett and Winslow (1967); Kramer (1969); Benton (1972); Porter et al (1973); White and Maguire (1973); McCloskey (1974); Godfrey (1978); Mobley (1979); Weisman et al (1981); Wandelt et al (1981) and McMahon (1982). She confirms that job satisfaction in nursing has been extensively studied. Opportunities for professional growth, advancement, achievement, and recognition among nurses are shown to be related to satisfaction. Job dissatisfaction is found to be related to inadequate salaries, poor supervision, inadequate staffing, poor inservice programmes, poor administrative support, and lack of opportunities for further education.

Munro studied the characteristics and attitudes of a randomly selected national sample of 800 nurses who had been in the workforce for three to five years. The results indicated that the nurses were not well satisfied with their pay, fringe benefits, working conditions, or opportunities for promotion and advancement. Munro also found that one area of great attraction for these groups was education. Further education was of interest to 90 percent of this sample, and they believed they had the background and intelligence to succeed at

it. The opportunity to continue to grow professionally and to do important and challenging work was of paramount importance to them.

To recruit and retain such as these nurses, their needs for further education and professional growth must be met. Munro concludes that nurse administrators need to look for ways to assist their nurses to become enrolled in educational institutions. Financial assistance, opportunity to participate in further study, opportunity to attend conferences and workshops, and availability of continuing education programmes should all be strengthened. This would be a suitable basis for nurses to grow professionally.

The importance of opportunity for professional development and career advancement has been confirmed in a more recent study by Dear et al (1985). These authors report some results from a continuing evaluation of an innovative approach to the reorganisation of nursing jobs and identify three major sources of job dissatisfaction of hospital nurses:

1. low degree of control over work content and process and insufficient decision latitude;
2. reduction of work to routines, with consequent role conflict generated through performance at a level lower than attained education; and
3. lack of opportunity for professional development and career advancement.

Thus, a review of relevant literature indicates considerable interest in job satisfaction as both a general issue and a specific nursing issue. There is well documented evidence that the nature of job satisfaction for professional nurses is of major concern to nurse administrators. The literature reveals considerable previous and ongoing interest in understanding the factors that keep nurses contented and involved in their work setting. In essence, the literature supports the view that considerable benefit is envisaged for organisations that successfully establish a satisfied, motivated workforce. All these theoretical viewpoints on job satisfaction, combined with the common sense logic of

encouraging motivated nurses, support the need to maximise nurses' job satisfaction through organisational efforts such as continuing nursing education.

This particular view is well supported by Kleinknecht and Hefferin (1982) who believe that "the organised continuing educational approach to professional development can be an effective means for motivating nurses towards professional and personal self-actualisation" (p. 35.)

From the researcher's point of view, the task of organising continuing education can be accomplished in several ways. In the first place, the curriculum planner can collect data from the nurses in such a way as to determine what their real needs and expectations are in relation to their professional and developmental stages. Secondly, the curriculum planner can make changes in the continuing education curriculum to help meet those expectations and needs. Thirdly, the curriculum planner can provide a curriculum that helps the nurse make adjustments in his or her expectations.

Continuing nursing education curricula could be designed to encourage and assist nurses to take charge of their own professional development. It could help them to evaluate their personal and professional interests and needs, set short-range and long-range goals, outline realistic plans of action, and delineate practical times for carrying through their development. The continuing education curriculum could be flexible, allowing time for adjustment to new roles and activities, periodic reassessment of needs and interests, and modification of goals and plans as needs and interests change. It cannot be denied, however, that the effectiveness of a continuing education programme varies with the nurse's level of interest in planning for the future, motivation to invest time in self-analysis and education and willingness to accept responsibility toward personal and professional growth. Nurses should be made aware, therefore, that their continuing education need not always be focussed on striving for promotion or changing a career direction. Nurses who feel that it is too late for them to think about developing a career

should not rule out participating in a continuing education programme, because professional development for some may simply mean achieving increased satisfaction with their present situation, by seeking and taking advantage of available educational opportunities to enhance their work performance and lifestyle.

The degree to which a continuing nursing education programme is successful is highly dependent on the motivational preferences of the nurse. The curriculum planner cannot dictate motivational preferences for nurses. On the other hand, it is not enough for the planner merely to advise nurses to attend continuing education, aim for particular positions, or acquire certain skills. The curriculum planner should be knowledgable about the ways in which nurses develop and about their needs and concerns in each developmental stage, should be supportive of adjustment to, as well as growth within, the work or life situation, and should be able to foster the blending of learning into new behaviour. Although fully cognisant of the organisation's need for qualified nursing personnel, the curriculum planner is not there primarily to develop a talent bank of professionals through education. Rather, the focus must be on assisting nurses to develop and direct their own growth. When the organisation gives open and consistent support to the concept of nondirective, individualised professional development, nurses may more often make use of continuing education and fulfil personal needs as they progress towards personal goals. Continuing education programmes can thus serve a dual purpose: while they can help meet the specific needs of the organisation and individual nurse, they also have great potential for tapping and expanding the reservoir of talent and motivation in the present nursing workforce.

CHAPTER THREE

RESEARCH PERSPECTIVES ON CONTINUING NURSING CURRICULUM CONSTRUCTION

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This study is concerned with curriculum development for continuing nursing education. In this chapter, therefore, theories and concepts of nursing curriculum development are considered, specifically relating to continuing education.

1. Frameworks for Nursing Curriculum Development

In recent years education has undergone upheaval and evolution in the matter of curriculum structure. This evolution has produced conflict, dissent, and confusion among nurse educators. Much of the conflict is due to irreconcilable differences in curriculum assumptions. In particular, when a single nursing curriculum inadvertently combines two or more structures, conflict and contradiction are inevitable.

The purpose of this section is to clarify philosophic concepts underlying some of the common curriculum structures in nursing, thereby providing guidelines to evaluate more accurately and select alternatives for curriculum construction in continuing nursing education. With broad understanding of the alternatives, the curriculum planner can have more valid criteria upon which to evaluate present programmes or to construct new approaches.

In reviewing the literature, one notices that a number of different curriculum structures have appeared in the basic nursing programmes since the early 1950's. Prior to this era, little consideration was given to the form of the nursing curriculum. Historically, the oldest surviving nursing curriculum is the disease-centred or teaching by "body system" approach commonly known as logistic or systematic structure. In this construct, knowledge is organised as cardiovascular nursing, gastrointestinal nursing and so on.

Each physiological system of the human body becomes the focus of a course. In turn, each course focuses upon the diseases or injuries specific to that physiological system. With this structure, knowledge is usually amassed by accretion or accumulation. Initially, there is no view of the whole, but knowledge is attained as fact after fact falls to form a pattern. As Burkett (1964) points out, with the additional fractional knowledge, the student's concept of nursing becomes broader and she begins to see the general framework into which each physiological fact fits.

This curriculum construction demonstrates the logistic method of development. Knowledge is systematically organised. One begins with a particular datum, then searches for causes, effects and related events. Lines of causal relations and probabilities of consequence are the focus. For example, one moves from etiology to pathology to clinical manifestations, and so on. Thus, the logistic structure is built on the parts; it does not focus upon the whole person. It is assumed that the student will know the totality by studying the individual component.

In addition to finding the structural form of a curriculum, further analysis is possible by looking at the interpretation which the system gives to terms. Each method of curriculum construction develops its own language and its own use of terms. Recognizing the kinds of meanings that a system applies to terms (that is, its semantic interpretations), will provide the curriculum planner clearer knowledge of the total system.

For instance, in the logistic mode described, the language has an atomistic interpretation. Terms that are literal, with unequivocal definitions are stressed. Terms such as "pathogen", "diseases" have specific and delimited meanings. They are meant to be understood in exactly the same way by all. Their meaning in no way is dependent upon or related to the nurse herself.

Many of the terms represent elements which the nurse cannot directly experience. For example, the nurse may apply correct technique to produce "asepsi", but she will never experience it; likewise, she will never "feel" microorganisms. This distance between the agent and the primary objectives of her study is characteristic of the logistic approach.

Even the concept of nurse is subsidiary in this logistic form. Focus upon her is incidential. In the early curriculum structure, she is seen as merely a functional agent who carries out orders as given by doctor. Levine (1966) notes an interesting historical evolution in the concept of the nurse; she relates the definition of nurse to the theory of health most prevalent during a given era. Therefore she finds no definition of the nurse for the phase of human development in which early man is a helpless victim of his environment. She notes that later, as the healing power of nature becomes a focus, the nurse is defined as the one who creates the atmosphere in which natural healing could best take place. This concept can be seen in the logistic approach; the nurse is the one who provides an environment of rest, good nutrition, cleanliness, and proper ventilation in order that the patient's body can best fight off the invading pathogen.

This logistic structure has predominated in nursing education for many years. Indeed, few nurse educators even question the possibility of alternate structures. Perhaps the chief advantage of the system is that nurses educated in this manner virtually have their nursing tasks programmed for them. If they follow the rules, they seldom go wrong. As both the nurse and her patient are removed from the concept of illness and nursing, few situations demanding nursing decision, will arise for the nurse.

The chief weakness, as Quiring and Gray (1982) point out, is the segregation of components. This segregation, it is claimed, greatly reduces the student's integration of knowledge. Consequently, few students have the ability to integrate all the separated units of study into a comprehensive pattern.

Historically, however, the problem of the logistic structure is that with the expansion of medical knowledge, the "entities" to be taught become overwhelming in number. Many nurse educators begin to feel overburdened by the logistic approach, experiencing inadequacy because the framework ill prepares the student for the care of some types of patients.

One of the early programmes to make a real departure from the logistic mode and to use a synthetic principle is described by Stonsby (1953). According to her description, the curriculum framework is not a calculus of disease but a concept of man from birth, through growth, to maturity. Stronsby focuses upon the healthy individual, as well as upon the ill person; and the curriculum deals with the total concept of man in relation to health. This birth-to-death curriculum represents the dialectic mode of thought as labelled by Quinlan (1955).

In this dialectic structure, one has a global view; the parts are seen as they function in the whole and the totality in this case is man. Each nursing course is a course about man. The curriculum moves by a process of assimilation. The nursing student does not learn one new entity after another as in the logistic structure, but she learns more and more about the same entity, man. Thus knowledge from any two courses fuses together into a larger whole and, from any particular point of knowledge, one is led towards knowledge of the whole. Hence, in the dialectic structure, thinking is akin to synthesising. Because of its synthetic nature, this method may permit easier resolution of contradiction than is possible in the logistic method. An application of this structure may be for the student first to study normal growth, maternal and infant care, preventive and community health; then to study minimal or common disease patterns, progressing to severe and terminal conditions and death. Thus, the patient is viewed as a totality, a person with individual needs and aspirations.

Terms stressed in the dialectic structure tend to have broad analogic meanings. For instance, the connotations of such terms as "geriatric" and "adolescence" have a broader range than the literal, lay terms such as "bacteria" or "pathogen" which typify the logistic approach.

With this dialectic structure, especially in the system which studies "man", the definition of the nurse also undergoes a change. Here, she is said to nurse the patient rather than the disease. Focus is placed upon the needs and problems of the patient, given in his particular state of health.

It is not coincidental that as the dialectic structure becomes popular, the concept of "total nursing care" arises. In this concept, the nurse meets all the needs of the patient, physical, emotional, psychological or any other kinds of needs that arise. Curriculum planners may question the feasibility or practicality of this concept of "total nursing care", but it clearly represents an attempt to give the concept of nursing the same comprehensive, holistic meaning that the concept of "man" is given in this curriculum.

Perhaps the chief advantage of the dialectic structure lies in the redefinition of the patient. Levine (1966) notes that in earlier time, the patient was seen merely as the repository of the disease. With the new formulation, the nurse is confronted with a totality, a person with individual needs and goals.

The dialectic structure also shows a synthesising trend in the concept of health as described by O'Kelly and McKinney (1971). These authors point out that previous nursing curricula focus upon disease alone. In the dialectic curriculum, illness and good health are seen as two parts of a single entity and the nurse is responsible for the health needs of both the well person and the ill one.

Thus, the chief contribution of the dialectic structure to nursing curriculum is the expansion of concepts of both health and nursing. Since the knowledge, tasks, and responsibilities of the nurse have tended to expand as medical knowledge increases, this structure presents a realistic way to cope with these increasing demands while still maintaining a unity in the course of study.

As Stevens (1971) reports, evolution of contemporary nursing education, once begun, is rapid. Writings in new modes of curriculum construction appear soon after the dialectic breakthrough. For instance, MacCambridge and Moucha (1954) describe a new curriculum that is based on the needs of the nursing students. According to these authors, no prestructured curriculum exists in their approach; students select from their environment the activities that will best suit their needs. The students may be placed in a hospital setting in an observation capacity, and then decide what they need to learn first. This initial period is followed by individual patient study.

In terms of structural analysis, this operational construct appears more complex than the logistic or dialectic forms previously discussed. The primary claim that the curriculum is patient-centred is asserted because this curriculum neither has its structure based on "diseases" nor "man", but focuses on individual patients. At first glance, this approach would seem more patient-centered than the curriculum which studies "man" in abstract. However, when one looks into the purpose served in studying the individual patient, one can conclude that despite the author's emphasis on the patient-centered aspects of this curriculum, the structure focuses primarily upon the student and her learning needs; the patient serves simply as an organizing center for knowledge. Indeed, Cotrel (1962) in a paper prepared for the National League for Nursing, divides all programmes into subject-centered or student-activity-centered curricula and classifies this patient-centered programme as a special type of student activity-centered curriculum.

In this system, the operational method chosen is that which best meets her learning needs. In the operational mode, all knowledge is focused by the perspective of the individual. Hence in this nursing programme, the proper way to construct a curriculum is from the perspective of the active learning student. Here the student is the centre of the curriculum, not the nurse educator or the patient. The central role of the student in this approach to nursing education is decision-making characterised by choices among alternate tools, instruments and even patients.

The operational approach tends to move by a process of differentiation and discrimination. According to Stevens (1971) this sort of organization holds a great appeal for the nursing student because of its existential, involved approach to nursing. The learner is immediately engaged in a pratical situation. She learns by being immersed in the hospital environment, admittedly unprepared by prior experience, aided only by the presence of the person who is her nurse model. Yet out of this morass of experience, she will select what she wants to learn.

As with the logistic and dialectic structures, the operational method also influences the definition of the nurse. Here the nurse is acquainted with the gravity of the process of nursing. This focus upon the nurse as an activity or operation can be seen in many other articles (Orlando, 1961; Berggren, 1968; Branch, 1976; Style, 1976 and Redman, 1978).

All these authors describe nursing as actional in character. Phrases such as "nursing intervention" or "nurse-patient interaction" typify the operational framework. They stress nurse-oriented activity itself. The nurse is no longer simply one who arranges the environment so that healing may take place. Nor is the focus placed on the patient himself; there is a shift in which the nurse becomes primary in her actions and activities. Health becomes something to be attained through intervention and manipulation. Emphasis is on the activities performed to produce this state. Hence the real focus is not upon the disease, or the patient, but upon the nurse's operations.

There is no doubt that the actional approach in the operational structure is of great value for two reasons: first, it coincides with the practical aim of nursing education, and second, its meets the nursing student's demand for relevancy in curriculum.

Perhaps the greatest difficulty in using the operational mode in nursing education is that of finding nurse educators and administrators who can properly implement such curriculum. There is difficulty on the educator's part in releasing her authoritarian control. This unstructured curriculum demands flexibility, creativity and greater teaching and administrative skills than many other curriculum plans.

Another nursing curriculum framework evolved at approximately the same time as the operational mode. For example, Streiter (1955) proposed a curriculum framework focused upon: sensory and motor problems, metabolic problems, distressing subjective symptoms, and breakdown of body defences. Here, obviously, the focus is not in the disease, nor in the patient, nor in the student; focus is in an identified problem.

One can easily locate the chief exponent of this method in education; John Dewey. In his original work, Dewey (1916) identified thinking with the process of inquiring. Thinking would occur only when things were uncertain and problematic. Acquiring knowledge, therefore, would always be secondary and instrumental to the act of inquiry. For Dewey and the problematic method, thinking originates in situations where the course of thinking is itself part of the course of events. This definition of thinking demonstrates the reflective principle of the problematic method; reality is found within the situational context itself. It turns within itself to find meaning.

In defining the features of a reflective experience and hence the basis of the problem solving method, Dewey indicates the following characteristics: (1) perplexity, in which one is implicated in an incomplete situation; (2) conjectural anticipation, that is, the tentative interpretation of the situation; (3) careful survey and exploration; (4)

elaboration of a tentative hypothesis; and (5) taking a stand on a hypothesis as a plan of action for testing. Dewey points out that reflective experience is distinguished from trial and error methods.

In the problem based nursing curriculum, then, the system moves by resolution. Progress is made by evolution in the statement of the problem and in the solution found. The outstanding factor in this mode is that the problem-solver is himself a part of the situation in which he moves. Thus his involvement will influence the factors he sees as pertinent, the way he formulates the problem, and the way he solves the problem.

A more specific example of problematic approach in nursing curriculum has been provided by Abdellah (1960). In her writing, she presents 21 nursing problems covering the common physiologic, psycho-social needs of all patients. Thus, she creates a problematic setting for the learning process. In this method, the student identifies a specific nursing problem; this becomes the focus of her thought. Any other problems exhibited by the patient become part of the total environment which must be considered in formulation of a hypothesis for the original problem. The problem becomes a means of teaching the nursing student to recognise and identify any specific issue in her patient environment.

Although different in orientation, similarities between the problematic and operational methods can be seen by analysis of the common terminologies. Such phrases as "nursing intervention" or "nurse-patient interaction" are common to both systems. Since both the problematic and the operational modes seek meaning in action itself, it seems logical that they share terminologies that express this relationship. From the curriculum implementation point of view, since the problematic method dictates that the nurse is herself part of that situation into which she intervenes, it is unrealistic and illogical for the nurse educator to expect identical responses from the students. This allowance for individuality on the nurse's part is in direct contrast to logistic method. In the logistic

mode as discussed earlier, the situation is seen as external to the nurse; hence, there is only one "right" way to respond to the patient or to perform a nursing procedure.

The problematic approach is arguably one of the most prevalent forms in nursing curriculum. As Steven (1971) claims, the approach presents many advantages to both the educator and the student as its situational style fits well with practice.

The preceding discussion provides an overview of major structural forms that can be utilized in nursing curricula construction. In recent years, however, a new term "conceptual framework" has appeared frequently in the nursing education literature, particularly that dealing with curriculum development (Saunders, 1973; Kissinger, 1974; Riehl, 1974; Ellis, 1979; Fenner, 1979 and Lawrence, 1983). These authors define a concept as an abstract that represents a certain classification or grouping of same phenomena. They advocate the use of a conceptual framework in providing a perspective for the reality. Although still in its infancy, the notion of basing a nursing curriculum on a conceptual framework is gaining momentum. Reilly (1975) asserts that a well-ordered conceptual framework will provide a more unified approach to the ordering and selection of the theoretical content of the total curriculum. Ellis et al (1979) further point out that it could serve as a guide to the selection and placement of courses and learning experience available and provides a rationale for selecting learning experiences that will contribute to the development of the educational course.

Although there are well published opinions that the use of a conceptual framework can facilitate effective curriculum construction in nursing, regretably the number of sources which offer a precise framework for continuing nursing education is lacking. However, reviewing of literature about continuing education in other professional areas, shows up some relevant concepts.

For instance, Chambers (1977) proposes a taxonomy of life skills to which continuing education could be directed. According to him, life is being constituted from:

(1) social skills at work, such as management and supervision tasks and relationships with others at work.

(2) social skills at home, that is, getting on with others in private life.

(3) coping skills, which include dealing with people in authority; leisure involvements; choosing, finding and improving work roles; and survival.(Chambers,1977 p.15).

Similarly, Scheele (1977) suggests the framework of self presentation skills, positioning skills and connecting skills as the broad areas on which recurrent education can build. Florio (1977) advocates a typology for the continuing education of school personnel. His framework includes problem solving, remedial (in both a teaching and non teaching context), motivational, upward professional mobility and security needs.

Perhaps one of the most significant contributions related to framework for continuing education curriculum is that provided by Nicholson et al (1976). These authors review over 2,000 articles on continuing education and, as a by-product of their extensive review, suggest five categories for future continuing education activities; namely, job embedded, job related, credential oriented, professional organization related, and self directed. Such offerings provide focus and meaning within the broader concept of continuing education.

This five-point classification system is well supported by Joyce et al (1976). In their attempt to develop useful contributions to a conceptual structure of continuing education, these authors interviewed over 1,000 persons from various aspects of education. As a result of their analysis, Joyce et al produced a broadly similar typology for continuing education activities. Their classification is:

(1) job embedded - meeting the needs of the teacher in the role of school employee.

(2) job related - meeting the needs of the teacher in the role of professional colleague.

(3) credential oriented - meeting the teacher's needs in the role of student of higher education.

(4) professional organization related - meeting the needs of the teacher role of a member of a profession, and

(5) self-directed - meeting the teacher's role of an individual craftsman.

Havey and Joyce (1978) propose a very similar typology which includes job embedded, job related, career related, professional and personal related aspects. According to this typology, the job-embedded aspect represents those continuing education activities related to more effective job performance; the job related aspect implies those activities derived from the specific organisational context of the job, but outside the direct job situation; the career related aspect concerns those activities derived from the need to pursue employment and a career in the organisation; the profession related aspect represents those activities derived from pursuing a role as a professional person; and the self-directed aspect covers those activities derived from pursuing the needs, interests and concerns connected with being an individual adult.

Hence, all these categorizations provide variations on the basic idea that it is possible to identify the purpose and concept of specific forms of continuing nursing education and to direct continuing education curricula towards a range of specific purposes. Each purpose becomes a valid component contributing towards the continuing education of nurses as both professionals and as individuals. Once the underlying structures in the continuing nursing curriculum are understood, the process of curriculum development will be enhanced.

Perhaps as Lawrence and Lawrence (1983) point out, one of the most critical elements of any nursing curriculum is the conceptual framework. All aspects of this framework need to be systematically organized and carefully articulated to planning of a course of study.

2. Present Problems in Continuing Nursing Education Curriculum Construction

Fivars and Gosnell (1979) state that one of the most difficult problems in the educational process is the development of the curriculum. To be effective, the curriculum must meet the needs both of the individual student and the society. In developing the curriculum, due consideration must be given to an underlying philosophy of education and the prevailing theories of learning. The curriculum must be viewed as a dynamic process which is constantly evaluated, reviewed and revised to meet the needs of the ever-changing world of complex professional and personal views.

One of the major problems in nursing curriculum today is that the process of curriculum construction is predominantly influenced by a linear approach. This mechanistic approach, which is used in planning a lesson, a unit, a module, a course in a curriculum guide, consists of four main decisions: identifying objectives, selecting learning experiences, organising learning experiences and selecting evaluation procedures.

Tyler (1950) is usually identified as the creator of this planning approach in general education. According to this approach, four important questions have to be answered as a means of building curriculum programmes:

1. What purposes should the school seek to attain?
2. How can learning experiences be selected to help attain these?
3. How can learning experiences be organised for effective instruction?
4. How can learning experience be evaluated?

In recent years Tyler's rationale as to curriculum planning has seen many variations of the objectives-experiences-evaluation model; for example, in Taba (1962), Posner and Rudnitsky (1978) and Tanner and Tanner (1980). Taba, for instance, expands the linear model into seven stages to include an important step that precedes the determining of

objectives - a diagnosis of the needs of the students for whom the curriculum is devised. Additionally, Taba's model draws a distinction between the content which is to be taught/learned, and the teaching/learning strategies by which this will be done. However, while Taba's approach overcomes some of the deficiencies of Tyler's model in respect to the latter's over-simplification of process and lack of directions for selecting objectives, it does little to answer the criticism that the linear sequence is too rigid and not an essential one to follow.

In nursing, random sampling of publications reveals many curriculum models, such as by Chater (1975), Bevis (1978), Wu (1979) and Lawrence and Lawrence (1984), to be variations of this linear approach.

For instance, Chater's (1975) curriculum model begins with the establishment of a goal(s), selecting the major topics to be included, listing the purposes for each programme, and then designing the curriculum; that is, simply organising and sequencing the parts to achieve a unified whole, produces the curriculum.

Similarly, Bevis (1978) defines curriculum as the learning activities that are designed to achieve specific educational goals. She views the basic problems of the curriculum construction process to be:

1. to determine the behaviours desired of the product;
2. to devise a system of experiences that will produce the specified desired behaviours; and
3. to discover whether the product exhibits the desired behaviours.

(Bevis, 1979, p. 8.)

All these views are further supported by Wu (1979) whose curriculum model begins with the establishment of goals derived from three sources: student characteristics, societal needs and constraints, and subject matter. Once these have been agreed, Wu asserts,

major topics can be selected and organised according to Tyler's criteria for curriculum construction.

Hence, a linear approach seems to imply that in human action, a person first decides on goal and then expends time and energy to achieve it. The goals or ends are separated from the activity or means and they precede and direct the activity or means. When this conception of human action is applied to planning nursing curriculum, the result is an emphasis on specific behavioural objectives. These objectives are then seen to constitute the first and most important decision to be made if the nursing curriculum is to be a productive one. But, it results in an under-emphasis on learning activities. Learning activities are arrived at as a secondary decision that must be directly related to the stated objectives if they are to be effective in meeting those objectives.

The linear model with its separated ends-means orientation is a logical, rational approach to curriculum planning in nursing. There is little doubt that the model works and that it can result in effectiveness and efficiency of nurses' learning. However, the problem is that it examines only one dimension of the curriculum and it imparts its separated ends-means value position to the nursing curriculum that is funnelled through it. Frequently, the value position of the model is inconsistent with the type of learning activity the nurse educator wishes to use, the kind of materials the nurse education intends to employ, the nurse educator's own set of values, and other factors associated with the teaching-learning situation.

Perhaps, an example of the inappropriateness of this linear model can be seen in relation to continuing nursing curriculum that addresses the principles of adult learning. Nurse educators who wish to implement adult learning principles generally have a commitment to increasing the nurse's intellectual and physical freedom. They believe that nurses need to explore and make decisions for themselves and take responsibility for their actions. They believe nurses need to acquire personal meanings and become autonomous. When

it comes to providing learning experiences or selecting subject matter or deciding about materials and resources, however, many continuing nursing educators use the linear approach in their curriculum construction. Their notions about adult learning are fed into the linear model and most of their efforts become ineffective because the linear model and adult learning principles are largely incompatible.

Moreover, the linear model, with its ends-before-means, maximises the nurse educator's power and control because it is the nurse educator who establishes the objectives and establishes them in advance of selecting learning experiences. The nurses, since they have little or no influence over objectives, have little freedom and independence. They must follow the direction set by the nurse educator rather than finding their own.

Continuing nursing education that is based on adult learning principles, on the other hand, maximises nurses' power and control. It also encourages nurses to be self-directed and to choose for themselves what learning to pursue. Of course, one needs to be cautious in an entire self-choice approach. This has to be done within the context of possiblity that nurses may not know enough of what to choose from.

In essence, the simplistic approach of the linear planning model does not suit continuing nursing curricula, nor does it suit other programmes or practices that stress nurse independence, self-direction and responsibility as emphasised in many nursing curriculum documents. It cannot be the filter through which all curricula must be processed. Instead, other planning models need to be developed that are compatible with and actually facilitate the implementation of the particular programme or practice. This limitation of a linear curriculum approach has been well voiced by curriculum researchers such as Unrah (1975), Schaffarzick (1976), Edelfelt (1978), Apelman (1978), and Rubin (1978).

For instance, Edelfelt (1978) writes:

> "The present linear approaches to curriculum development in continuing education are chaotic. All current models involve a step by step process that blithely ignores the multivariate situations of the ideas, perceptions and emotions of people in different roles with different motives and orientations."
>
> (Edelfelt, 1978, pp. 3-4.)

However, to develop other curriculum processes is not going to be easy because in many respects the linear approach is embedded in the nursing curriculum. To think of other ways to plan or prepare for action seems like a challenge to reason itself.

As Mooneyhan and Campos (1984) suggest, however, several conclusions are emerging simply from the process of trying. Firstly, it is acknowledged that the nurse educators cannot be by-passed in effective curriculum change. The nurse educator must have an important and active role in curriculum development if a curriculum is to accomplish all that is hoped for it. Second, the curriculum is more complex than many advocates of change have recognised. Attempts to improve only small segments of the curriculum will not produce lasting or fundamental changes. The curriculum must be dealt with in all its complexity, not with simplistic approaches.

A multidimensional approach enables the curriculum planner to check one decision against another and ensures that compatible decisions are made. In reviewing the literature, one notes that the alternatives envisaged are usually premised on a stronger relationship between theory and practice than exists in the more pragmatic current approaches intended to remedy specific deficits. For example, Johnstone and Yeakey (1977) review the problems and limitations of current continuing education programmes perceived as not functioning effectively or achieving desired results. They point to the need for a sound conceptual framework of agreed purpose and process for future curriculum construction.

This perspective is echoed by Houston and Freiberg (1979). These researchers identify issues that systems and the profession have to face in order to put real effort into continuing education. Houston and Freiberg criticise many current continuing education programmes for being fashioned without regard to research findings and argue the need for conceptual frameworks and systematic design for continuing education curricula. A multidimensional approach is suggested as the only apropriate solution to the many demands on continuing education. As Apelman (1978) notes:

> "Multidimensional curriculum development models are needed for curriculum improvement - aimed at ensuring that at every stage of their career, participants can obtain relevant experiences and training appropriate to that stage. If we wish to improve inservice, we must learn to differentiate amongst the needs of participants." (Apelman, 1978, p.25.)

A specific example of multidimensional approach has been initiated by Unruh (1975). In this approach, a matrix is used to combine selected characteristics to be developed by the curriculum. Each cell of the matrix specifies different patterns of needs and outcome towards which precise curriculum activities are then directed.

Goodlad (1979) provides a multidimensional curriculum approach that consists of three dimensions; namely the curriculum perspectives, curriculum elements, and curriculum qualitative factors. The first dimension of the curriculum identifies five perspectives: the ideal, formal, instructional, operational and experiential. The second dimension consists of nine curriculum elements: goals and objectives, materials, content, learning activities, teaching strategies, evaluation, grouping, time and spaces. The third dimension identifies nine factors: present practice, decision maker, rationale for decision, priorities in the curriculum, attitudes towards curriculum, appropriateness of the curriculum, comprehensiveness, degree of individualisation, impeding and facilitating factors. Each of the perspectives intersects with each of the elements and factors. Curriculum decisions may be made <u>on behalf</u> of students by the curriculum planner, thus increasing consistency and potential usefulness of the curriculum.

In a different emphasis, Beauchamp (1981) considers there are three legitimate uses of the word "curriculum". According to him:

> "A curriculum is a written plan depicting the scope and arrangement of the projected educational programme for a school."
>
> "A curriculum design is the substance and organisation of goals and culture content so arranged as to reveal potential progression through levels of schooling."
>
> "A curriculum system is a system for decision making and action with respect to the three primary curriculum functions: planning, implementing, and evaluating."
>
> (Beauchamp, 1981, p. 206.)

All these definitions can be interpreted such as to allow a multitude of elements to be involved. Input into the curriculum system includes community characteristics, social and cultural values, and the personalities of the persons involved. The output is a curriculum or a written document. The combination of these elements must be considered when a curriculum is being developed.

Another multidimensional aprroach has been suggested by McDonald (1982). He considers the focus of curriculum is not simply a context where a curriculum is a metaphor operation. To him, the focus of curriculum is a microcosm of the universe to which one brings oneself, consciousness, and culture reality. Accordingly, his approach to curriculum construction consists of three dimensions; the person dimension which includes life story, biography, preconscious and collective unconscious; the professional dimension which includes knowledge of field, knowledge of how to work, orientation to problematics, awareness of needs and society; and finally, the intellectual awareness dimension which includes the historical and the contemporary, culture and life. All these elements can be synthesised and analysed in the activity of curriculum development.

Thus, the concept of multidimensional curriculum development can be interpreted as being any curriculum construction approach in which multiple sets of need characteristics are specified and relevant curricula are developed on a simultaneous basis for the whole

range of need patterns so established. The concept provides a curriculum construction process that could both identify and respond to multiple sets of student needs at any given time.

As described this way, the multidimensional process is an extension and refinement of traditional linear methods. Although it still contains linear flow patterns of curriculum development, each pattern now represents the needs of only one particular user subgroup of participants addressed by the curriculum construction system.

3. Approaches to Continuing Nursing Education

In its report, the Commission on Nursing Education (1975) treats continuing nursing education as planned learning experiences beyond a basic nursing education programme, aiming to promote the development of knowledge, skills and attitudes for the enhancement of nursing practice and health care to the public. Continuing education, then, helps nurses to enhance their competence in their work role. Because it is a post-basic form of education, nurses bring to the context of continuing education their own experiences and personal authority regarding their role as practitioners.

The Commission's (1975) view is well supported by the nursing profession. In her discussion on present patterns of nursing education in Australia, Slater (1974) asserts continuing education as a necessity for every professional nurse. Studdy and Hunt (1980) report that the majority of their sample considered continuing education to be desirable. They believe such positive attitudes should be encouraged and opportunities made available. These researchers conclude that continuing education for nurses is essential if they are to maintain and develop their professional competence and awareness. Similarly, Olade (1982) points out that in dynamic societies, there is greater recognition of the fundamental need for continuing learning to enable nurses to keep up with rapid changes in both social and technological spheres. Ellis and Greenwood (1983) also plead

that nursing professionals could best maintain their competence through well conceived continuing education and professional development activities.

Despite general consensus on the needs of continuing nursing education, there is substantive disagreement about the best approach. Various ideologies co-exist. For instance, there are those, such as Curran (1977), who advocate patient care as the primary focus and propose the basic purpose of continuing education to be to improve the quality of patient care through nursing education. A somewhat different approach centres on organisational needs, a position typified by Gothier (1983) who suggests "the emphasis in continuing education is going to be on retaining staff, stimulating staff, and assisting them with the monumental task of keeping up the organisational goals" (p. 89). Yet another approach is provided by Popiel (1977), Tait and Trussell (1977), and Sovie (1981) who consider continuing education must be nurse centred. For instance, Popiel (1977) suggests the purpose of continuing education for nurses is to provide for self development and professional growth. Tait and Trussell (1977) argue that the continuing education programme should endeavour to assist nurse practitioners in realising their potential more fully, through providing educational opportunities in their special areas of interest, as well as offering opportunities to become liberated from their own backgrounds so that they can play an increasing role in the community they serve. Sovie (1981) has said essentially the same thing; that the overall goal of continuing education is to help individual nurses achieve and maintain professional competence and realise potential.

More recently, a trend has developed in which continuing nursing education is considered as a combination of approaches toward meeting the needs jointly of patients, nurses and the organisation. Hence, continuing education is considered by Fojtasek (1985) as a process of formal learning activities which includes organisational and individual input, planning, implementation and performance. Similarly, Dodwell (1983) claims the primary aim of continuing education is the improvement of patient care. However, it

should also raise morale, increase job satisfaction and increase the status of the profession.

Perhaps a perspective of criticism of all these approaches has been provided by Chambers (1977). Chambers comments:

> "The irony of continuing education is that there is general agreement about its importance, and general dissatisfaction about its implementation." (p. 15.)

Chambers' view is echoed by Duvillard (1980) who reports that nurses clearly indicate that they look forward to continuing education but, regrettably, find that existing programmes meet only a limited part of their needs. Similarly, Gothier (1983) notes that continuing education often focuses on the nurse as a passive learner, coming to a large room to sit, listen, and take notes from an expert presenter on a specific topic. Little attention is paid to conditions existing prior to the learning experience or to student encounters with the learning process itself. Townsend (1981) points out that recent continuing nursing education does not provide the quality of education necessary to enable the registered nurse to function effectively in an expanded role. There appears to have been an ad hoc approach to the development of courses. Townsend concludes that there is an urgent need for investigation and rationalisation in the type, length and frequency of courses required to answer the needs of nurses in whatever area they may be working.

All these reviews reflect various efforts made by the nursing profession both to keep its knowledge and practice current and to strengthen that effort in future. There is a clear indication that the future must be quite different from the past. Regardless of the direction taken, progress in nursing depends upon the acceptance by nurses of the concept of life-long learning for professional development.

In analysing the problems of the current approaches used in continuing nursing education, the researcher observes that many programmes of the past were designed only for remedial changes in the nurse. Yet, perhaps the focus of continuing nursing education should be seen as the means of keeping up with the knowledge explosion and the learning of new skills that are necessary for effective performance in current and future roles of the individual practitioner. The future of continuing education must be seen as purposeful, meaningful experiences for nurses. This leads the researcher to look at the nurses in terms of their concerns and needs. Continuing nursing education is not merely the collection of certificates through post-basic or tertiary level courses. It is a life-long process that allows new or expanded role performance and transition from one career stage to another.

The researcher's view is well shared with other nurse educationalists. For instance, del Bruno (1975) comments on the need for objective assessment of each nurse's concerns. Townsend (1981) suggests that educational options developed for the future should reflect needs identified for greater accessibility to new work and flexibility in the way progress is made. Ideally, each member of nursing staff should have a developmental profile with an indication of professional needs. Slater (1974) asserts that continuing education programmes should be planned to meet the perceived needs of the nurses who will be attending and that representatives of that group should be involved in organising the programme.

Similarly, Gothier (1983) concludes that any proposed educational options must accommodate the variety of identified needs and should be appropriate for use by all sectors of the nursing profession covering various developmental stages. An increasing emphasis needs to be given to levelling the continuing education process so that it genuinely "continues" the education of the nurses and its meaningfulness to them. The philosophy must encompass the belief that learning activities will be based on real educational needs and interests of nurses. Perhaps, as King (1981) sums up, continuing

nursing education must provide programmes and activities that enable nurses to maintain and improve competence in their present jobs and to develop professionally through their career stages. Course content and learning experiences selected for any course must depend upon the level of professional development of the participant. The staff must listen to what participants say they need.

In examining approaches to continuing nursing education, the researcher found many other considerations important in developing successful nursing curricula. For instance, to make the learning experience more valuable to individual nurses that participate, it is helpful to look at principles of adult education. As Popiel (1977) describes, adults usually choose their continuing education on the basis of its relevance to their needs, its timing, its convenience and its cost, with relevance to needs likely to be the foremost factor.

Hence, as professional adults, virtually all nurses have the desire to learn what is relevant to their professional role and to the problems they face with that role. Inferred with this idea is that, unless the nurse can see her own need to learn a particular subject and unless she is able to choose freely the manner in which she will learn it, then little learning will take place. The planning and designing of learning experiences challenges the curriculum developer to draw on methodologies of adult education, action and learning style.

In extending such concepts, perhaps one can consider continuing nursing education as a humanizing process. This means that it is a process of dialogue and encounter, not one for the mere transmission of facts or technical skills. Continuing education involves nurses in the discovery of their work and of their view of their work world. It is a dynamic process through which nurses reflect critically on a problem. When the educators enter this process, they are likely to become both humbler and more receptive to their own learning. Neither problems nor solutions are handed to nurses. Rather there is a dialectic process of involvement both for nurses and educators. Nurses' questions

assist the educator to rethink what is known and to answer nurses with new insight. Continuing education is problem-oriented and action-directed in the process of becoming. It is trying out, evaluating, questioning. It allows nurses to grasp and act on important themes and issues outside the formal learning setting. Authority - with the exception of each person's sense of authority - is played down. Nurses are encouraged to choose freely, without their choice being tied to the expectations of others. Continuing education becomes a liberating, freeing process, where critical understanding is enhanced. The work of the educator, therefore, consists not only of passing on the use of techniques; it includes helping nurses who have had historical experiences to transform their work role and world.

Furthermore, this researcher believes there is a need to upgrade the style and curriculum of present continuing nursing education. What is needed, broadly stated, is research to determine continuing education curriculum development and more new creative, and innovative approaches to continuing education. These ought to account for the characteristics of adult learners and should be enhanced by the adoption of a multidimensional approach.

There is evidence that this researcher's view is shared among other nurse educationalists. Chamber (1979), in describing the nurse as continuing educator, clearly assserts that the present linear approach to curriculum development in continuing education is chaotic. She emphasises that curriculum models need to be built from a set of concepts and assumptions about learning, the nurse's characteristics and stage of her professional growth. Similarly, Mederis and Popiel (1977) express the view that for the continuing education programme to be successful and dynamic, it must be designed as a learning model and demonstrate multidimensional facets.

Hence, all these writers point to the view that it is reasonable to assume one cannot develop continuing nursing education with the traditional method. Programmes must be

designed individually and tailor-made to fit nurse's identified requirements. The curriculum planner must recognise that input from nurse participants is vital to ensure relevance of content and constructive feedback about the curriculum.

Thus, there is considerable published opinion to support a nurse needs based approach to continuing education that aims at professional and personal growth through stage development of a nurse's career. However, a major problem in acting on this suggested approach is that all the quoted sources represent opinion, unsupported by actual research data. A review of the literature on continuing education for other compatible professional workers who have implemented continuing education programme years ahead of the nursing profession also reveals a very small number of research based studies of continuing education. These research findings are summarised accordingly.

For instance, Nicholson et al (1976), in their review of over 2,000 articles on continuing education for teachers provide an analytic review of inservice studies prior to 1976. These authors report that the various continuing education programmes examined have no underlying conceptual framework, are situation specific, conceptually isolated and generally addressed only very short term, specific needs. Those that do succeed tend most often to depend upon delivery by a local colleague, with likely maximum impact occurring around the cognitive aspects of an issue. These authors conclude that the future approach to continuing education needs to be quite different from that of the past and that a possible typology for future continuing education could be: job embedded, job related, career advancement, profession related and self directed; that is, the scope of continuing education needs to be expanded and differentiated in purpose.

Havey and Joyce (1978), working from interviews with teachers, parents and college staff report the various viewpoints among the three groups regarding the most effective formats and types of continuing education. These authors advocate that a more realistic conceptualisation of teacher roles, as well as the structural organisation changes, is

needed in schools.

A multidimensional data base composed of the legal-political-economic dimensions, the structural-organisation dimensions and the personal-psychological dimensions is suggested. These authors conclude that the format for future continuing education should be expanded into job embedded, job related, general professional, career credential and personal aspects.

Another investigation considered directly relevant to new approaches for continuing education is provided by McLaughlin and Marsh (1978). These authors review the societal and educational reasons as why professional staff development has assumed new importance and summarise the findings of a Rand Corporation study on the local process of change. These authors conclude that four clusters of significant variables are essential for successful local change, namely (a) institutional motivation factors - especially visible support by the organisational hierarchy for the particular change, (b) project implementation strategies - especially collaborative planning as the only effective long term strategy for the implementation of changes, (c) institutional leadership factors - where the key requirements are supportive departmental heads, positive project leaders and supportive organisational leadership and, (d) participants' characteristics - where the most significant factor of all in obtaining effective change is the professional workers' faith in their ability to bring about change.

The conclusions of the Rand Corporation study clearly indicate the need for change in organisational practices to occur through professional worker attitude change, a reinforcement to the view that organisations need to achieve their goals through changes in their staff, rather than by the traditional methods of changes in tasks or organisational structure.

These studies represent the limited amount of available research data base - as distinct from an informed opinion data base - from which a new approach to continuing education could be derived. Both areas provide strong support for adopting nurse needs and concerns as the basis of a revised approach to continuing education.

Perhaps further support for selecting nurse needs and concerns as the planning base came from the developing theories of supervision such as human resources supervision proposed by Sergiovanni and Starratt (1979). This supervisory approach argues for satisfied, competent staff as an employer system goal and not as a means to an end. These authors note that the "human resources supervisor ... views satisfaction as a desirable end towards which staff will work. Satisfaction, according to this view, results from successful accomplishment of important, meaningful work and this sort of accomplishment is the key component of organisational effectiveness." (Sergiovanni & Starratt, 1979, p. 6).

In summary, various informed opinions and research findings provide a clear indication that existing approaches to continuing nursing education are unsatisfactory. Nurses must be the key factor in the successful implementation of new ideas and their attitudes towards changes are vital. Some form of nurse needs assessment is essential as the base for continuing education curriculum planning. The continuing education planner must be capable of providing different curriculum items appropriate to the needs and concerns of the particular nurse group for which it is intended. Moreover, continuing nursing education needs to be expanded from its present job specific, patient and employer related issues and restricted approaches into a wider range of functional concerns directed towards nurse professional growth, co-ordinated over the nurse's career.

CHAPTER FOUR

THE CONTEXT AND APPROACH

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1. The Setting of the Research

1.1 Regional Overview

This research took place in the Illawarra Region, a mixed industrial and rural area with most of the population concentrated within 50 kilometres of Wollongong City. There are 177,000 people in the City of Wollongong alone.

The northern portion of the Region has developed along the narrow coastal corridor to the north of Wollongong and the plains between Wollongong and Albion Park. The economy of this metropolitan area is largely based on steel production and associated manufacturing industry, with most heavy industry concentrated at Port Kembla.

The southern portion by contrast is characterised by three major population centres (Nowra, Kiama and Milton-Ulladulla) with the remainder of the population scattered in small rapidly growing settlements stretching 140 kilometres along the coastline. This area is predominantly rural with the population growth being attributable to people retiring to the South Coast.

The Region's population has the following characteristics:

1. aged population tends to be concentrated in the central and northern suburbs of Wollongong and the developing coastal settlements of the South Coast;
2. Shellharbour has a high and increasing proportion of young families;
3. Kiama has the highest growth rate of any Local Government Area in the Region, attracting both retired people and young families;
4. the proportion of aged in the Wollongong population is substantially less than the State average. This is expected to increase rapidly by the year 2000;

5. the percentage of people born overseas is high. The range of countries of birth is also very wide.

1.2 Nurse Education Within the Region

During the past two decades, concern has been expressed about the inadequacies of the traditional hospital based system of nurse training. Many factors can be identified as having given rise to this concern. For instance, the recent advances in medical science and technology, intense pressures for greater cost-effectiveness and accountability within the health care services, have all precipitated a need for change in educational direction. While these developments have affected the education and practice of all health professionals, they have their greatest impact on nursing. This is hardly surprising given the nature of nursing as a clinical practice discipline on the one hand and its numerical significance within the health services on the other. Nursing is an interpersonal process involving the use of particular knowledge, skills and attitudes to assist people to identify and work towards the achievement of health goals acceptable to them. The level of expertise to which nurses must be prepared in order to function effectively is therefore influenced both by advances in medical science and technology and by changes in society which in turn influence the needs and expectations of those receiving nursing care. As nurses make up by far the largest occupational group within the health care services and, as Australia's health services have increased in diversity and complexity, the role of the nurse within these services has become increasingly complex and demanding.

Since the 1970s, a growing number of nurse administrators and educationalists within the Region have been aware of the inability of traditional employment-based nurse training programmes to provide either the breadth or depth of learning experiences necessary to establish a sound basis for professional nursing practice. As a result of this recognition, since 1980, basic nurse education in the Region has been conducted by the Illawarra School of Nursing, under the direction of the Illawarra Regional Council of Nurse Education.

The Regional school provides a departure from the usual hospital school of nursing in the State. In the establishment of a regional school of nursing, close links have been developed between the Illawarra Regional Council of Nurse Education and the University of Wollongong, which has made its resources available to the Illawarra School of Nursing.

The Illawarra Regional Council of Nurse Education has worked, since its inception, towards the development of tertiary level basic nursing programmes. Following the initiative of the New South Wales Government which transferred all basic nursing courses to tertiary institutions in 1985, the University of Wollongong has undertaken the preparation of the pre-service nursing programme.

2. Identifying the Nurses' Career Stages

2.1 The Delphi Technique

One of the thorniest problems facing the researcher is posed by the notion of nurses career/developmental stages, where there is a lack of hard data and validated theories. Although the researcher can elect a hypothetical construct of career/developmental stages descriptors such as early, middle and late career stages, a somewhat systematic approach to these intangible notions through the explorary exercise of Delphi technique can sharpen consensus amongst nursing professionals and help identify the main attributes and charactertistics of career stages.

The term Delphi has been described in many ways. Salancik et al (1971) consider it as a technique designed to solicit and collate informed judgements systematically about the future. Krubock (1973) suggests Delphi is a method of obtaining systematically a consensus of opinions from groups of experts. Rasp (1973) proposes Delphi as a carefully designed programme of sequential individual interrogations with tests conducted by questionnaires and interspersed with information and opinion feedback. Delbecg

(1976) favours Delphi as a group process that utilises written responses as opposed to bringing individuals together. More recently, Allen (1978) identifies the Delphi technique as a forecasting methodology for generating expert opinion on any given subjects.

All these brief descriptions indicate a broad range of uses for the Delphi technique in social science research. However, Dalkey et al (1972) and Dalkey (1975) suggest there are characteristics that appear to be common to these descriptors and to the technique's different uses:

1. the exercise involves a group;
2. the goal of the exercise is information, i.e., the exercise is an enquiry;
3. the information being sought is uncertain in the minds of the group; and
4. some preformulated systematic procedure is followed in obtaining the group output.

A similar view is shared by Lindeman (1975) who considers key characteristics of the Delphi approach to be:

1. anonymity of survey panel members;
2. anonymity of response;
3. multiple iterations;
4. statistical analysis of panel response;
5. controlled feedback of response to panel members.

In general, Delphi consists of a series of questionnaires. The first questionnaire requests responses to a broad question. This question may be concerned with forecasts, goals and objectives, or problems and their solutions. The responses from each questionnaire are summarised in some manner and fed back to participants on the next questionnaire, the result being that each questionnaire is built upon responses to previous questionnaires. This process continues until consensus occurs, the desired information has been generated, or sufficient information exchange has occurred. The anonymity of responses prevents any one member of the panel from unduly influencing the responses of other

panel members. Through statistical summaries and report, panel members communicate with each other, but only in a limited, goal-centred manner. The systematic control lends an air of objectivity to the outcome, which provides a sharing of responsibility that is reassuring and releases the participants from group inhibition.

Dalkey (1975) considers there are three main uses of Delphi, the first being its original use as a forecasting technique. The second use is an alternative to the committee approach to policy formulation. Mitroff and Turoff (1975) describe this use of Delphi as a "Dialectical Policy Inquirer" (p. 31) and define Policy Delphi as an organised method for correlating views and information pertaining to a specific policy area and for allowing the respondents representing such views and information the opportunity to react to and assess different viewpoints. The third use of Delphi is in the development of goals and objective sets for planning. Skutsch and Schofer (1973) advocate this use of Delphi because it helps to develop a fine woven and strong hierarchy of goals. With additional clarification, it can be useful as a planning tool. Typically, this Delphi consists of two types of rounds:

1. idea and list generation round where participants list goals and objectives for the topic being considered; and
2. voting or priority-setting rounds where participants rank the list statements.

The generation rounds continue until a comprehensive list has been obtained. The voting rounds follow and continue until consensus has been reached or until stability of the voting has occurred.

As with any research technique, especially one so relatively recent in its development, there has been criticism about its application. From the researcher's point of view, it is important to be aware of the disadvantages. For instance, Skutsch and Schofer (1973) suggest that because of the lack of motivation generated by face-to-face interaction, Delphi solutions may suffer. In addition, these authors argue that the success of group or team work is frequently attributed to the high level of morale generated; whereas, with its

rather clinical anonymity, Delphi may lose this group togetherness.

Turoff (1970) discusses three potential drawbacks of the Delphi in policy formulation in organsiation. Firstly, participants may misinterpret the Delphi exercise to be a policy decision tool as opposed to a policy analysis tool. Secondly, once a Delphi exercise has commenced, there is no way to guarantee or control for a specified outcome. Thirdly, an item under consideration in the Delphi may be listed out of context of the exercise and made public by respondents as a supposed item under consideration by the policy body.

Hill and Fowles (1975) discuss two further weaknesses of Delphi. The first is that as the Delphi exercise proceeds from one round to the next, the topic becomes sharper and more specific and any attempt to introduce broader concerns is discouraged. The second weakness is that despite all efforts to the contrary, it appears that forecasts generated by Delphi may still be too ambiguous to serve planners.

Perhaps the strongest criticism of the Delphi comes from Sackman (1974) who, in his comparison of Delphi with standards expected in Social Science, concludes that conventional Delphi neglects virtually every major area of professional standards for questionnaire design, administration, application and validation. In no sense is Delphi found to be a serious contender in scientific questionnaire development and in the experimentally controlled and replicable application of a questionnaire.

Despite such strong criticism, Delphi has been applauded by many as a useful research tool in investigating a variety of problems and issues. Turoff (1970) presents four problems of committees that can be overcome by Delphi approach: These include:

1. the domineering personality, or outspoken individual who takes over the committee process;
2. the unwillingness of individuals to take a position on an issue before all the facts are in or before it is known which way the majority is headed;

3. the difficulty of publicly contradicting individuals in higher positions; and
4. the unwillingness to abandon a position once it is publicly taken.

Delbecg (1975) provides further advantages of Delphi:

1. adequate time for thinking and reflection;
2. avoidance of undue focusing on a particular idea;
3. avoidance of competition, status pressures, and pressure to conform;
4. the benefit of remaining problem centred;
5. flexibility in allowing participants to respond at the most convenient time;
6. avoidance of choosing between ideas prematurely;
7. no travel time required; and
8. anonymity.

Further, according to Delbecg, Delphi, when compared to face-to-face groups, reduces the need of participants to expend on social-emotional relationships energy that can more profitably be used to deal with the problems under consideration. Delphi also promotes a proactive search process, because evaluation does not occur until all ideas are presented. Writing forces respondents to think through the process and the written expression of ideas induces a greater feeling of task commitment and a greater sense of permanence than does spoken expression.

The application of Delphi is further supported by Scheele (1975) who suggests that the results of Delphi could be seen as the product of a carefully designed and managed interaction to answers to a set of abstract questions that are obtained by following prescribed methods. This interaction through Delphi produces a common reality. Unimportant, biased or irrelevant discussions are diminished and anonymity preserves the virtues of independent thought.

Furthermore, in his discussion of new methods in social science research, Allen (1978) asserts that although originally developed as a technique for long range forecasting, Delphi today has been successfully used in other sectors and for other purposes. According to Allen, these uses include:

"1. Building a model of a complex problem by eliciting statements of structure and process of it

2. Laying out the positive and negative aspects of a crucial decision that has to be made

3. Revealing causal relationships between events

4. Measuring the impacts of a particular policy on other variables in the problem

5. Constructing theory through a series of statements about the most significant research finding in the field

6. Identifying barriers to the implementation of a particular policy

7. Identifying future market conditions for industry

8. As a research tool for examining history or past performance."

(Allen 1978, p. 126.)

Hence, it is not surprising that the Delphi technique has been applied to numerous fields since its development in the 1950s. During the past two decades, the technique has been applied in educational innovation (Adelson et al 1967), evaluation of research projects (Sean and Mathis 1968), social planning at the community level (Reisman et al 1969), cost-effectiveness, cost-benefit analysis in higher education (Judd 1972), quality of life (Dalkey 1972), technological forecasting (Ford 1975), urban passenger travel (Bureau of Transport Economic 1977) and urban transport (Bureau of Transport Economic 1982).

More specifically in the health service, Delphi technique has been applied extensively by Gustafson et al (1975) in the design of health policy research; Stakweather et al (1975) in health care organisations; Kumaran et al (1976) in psychiatric hospitals; Lindeman (1975) in priorities in clincial nursing research; Moscovice et al (1977) in health services research for decision making; Charlton et al (1981) in spending priorities; Bonds and Bonds (1982) in clinical nursing research and Anderson (1986) in nursing standards.

In summary, this section has attempted to describe Delphi, its limitations, attributes and present uses. A Delphi exercise, properly managed, can be a highly motivating environment for respondents. The feedback, if the group of experts involved is mutually self-respecting, can be novel and interesting to all. The use of systematic procedures lends an air of objectivity to the outcomes that may or may not be spurious, but which is at least reassuring. Anonymity and group response allows a sharing of responsbility that is refreshing and that releases the respondents from social inhibitions. With its limitations and attributes in mind and despite the criticism listed earlier, an attempt to introduce a treatment to the intangible notion of career/developmental stages, Delphi technique will be employed in this study. In doing so, the researcher will try to account for most of the criticism in some way and is prepared to wear the residual risks.

2.2 The Process of Implementing Delphi

The procedures utilised by Delphi studies appear to constitute a suitable method for collecting opinions from nurses about their career/developmental stages. Factors such as the intangible nature of many of the developmental issues, most of which involve values and judgements, along with the diverse backgrounds of nurses at various career stages, lead readily to the use of Delphi as a means of exploring the options.

From the standpoint of the researcher, expert opinions about nurses' career stages and their attributes are just as relevant to decisions as the accepted facts. Hence the question of whether Delphi procedures offer real advantages for use with values data is a question of direct importance.

There are several difficulties in attempting to conduct research dealing with the excellence of value judgements. Above all, there is no generally agreed method to measure the adequacy of such judgements. Although there is some disagreement with respect to the proper measure for predictions of future events as described by Dalkey (1972), it is generally agreed that one relevant measure of excellence of opinions is just how close

those opinions come to the true state of affairs as measured in some acceptable way subsequently. In general it is not difficult to arrange some scale whereby closeness to the state of affairs can be measured, although for opinions about the future, the investigator may have to bide his time. But in the case of value judgements, there is no generally agreed-upon corpus of facts against which the judgements can be compared.

Another difficulty often alleged about assessing the quality of value judgements is that they are emotionally loaded. Expression of such judgements is more directly tied to emotions than to factual statements. Furthermore, commitment to those judgements is more central to the personality of the individual, such that value judgements interact with the cognitive domain.

These difficulties may be considered enough to discourage any objective measurement of the excellence of such judgements. However, there should be no particular difficulty if value judgements are considered simply as one aspect of human behaviour. It is possible to study the genesis of judgements and the interrelationships between value systems without ever exploring the subject matter in terms of whether it reflects good or bad judgements.

However, this point of view is not the concern of the present inquiry. The usual point of view is that value judgements can be, in some sense, good or bad. For example, in the present study, the researcher attempts to examine what are the nurses' career stages and what are the nurses' relevant attributes. It appears fairly clear that the researcher is not interested in the nurses' capricious feelings about what the career stages may be. The researcher would be unwilling to accept the assertion that any set of whimsical attitudes could be just as reasonable as the one identified systematically and logically.

Perhaps one can suggest that the judgement being made by a group of experts is a mixture of values and evidence (the evidence being based on mere cues picked up in long

professional experience but not yet the subject of systemic research data). Hence, if a group of equally competent individuals expresses a range of opinions concerning a value question, then the average opinion is more likely to approximate the best answer than an individual judgement, given the presumption that there is an appropriate answer to the value question. In order to make this assertion logically acceptable, it is perhaps necessary to assume that the individual judgement can be expressed in numerical terms. Such a quantitative approach is adopted in this Delphi study. The questionnaires and results are included in Appendices A1 - A6.

The Panels

Names of nurses suitable for inclusion were sought through correspondence, personal contact and recommendation of the researcher's peers. From these sources, eight potential members were identified. The potential members were then sent a letter describing the project and were invited to participate on the basis of their professional experience and an appreciation for research. Assurances of membership confidentiality were given. Out of these eight members approached, five agreed to participate. The five members of the panel covered a wide range of experience in specialised and general nursing practice, education and administration. As a group, the panel consisted of three nurse educators, one nurse administrator and one nurse practitioner.

The Survey Procedures

(a) Round One

Several approaches were explored during the developmental phases preparatory to Round One. A list of initial tentative variables of career/developmental stages of professional nurses was developed from the available literature and served as a starting point for the panel members to react. The initial test was pretested on the researcher's co-workers who had not been involved in the design, to identify items that were stated in a confusing manner. The first round questionnaire, distributed in early 1986, consisted of several sections:

1. Add variables - The respondents were asked to generate additional items to the tentative list.
2. Modify variables - Respondents were requested to rewrite and to provide alternative versions of the item.
3. Removal of variables - Respondents could delete any item and provide a rationale for such delection.
4. Additional questions - These included questions about previous experience with Delphi techniques, suggestions to improve the Delphi technique and decisions in regard to the percentage of panel members required to remove a variable.

All five panel members (100%) actually completed the Round One questionnaire. None had participated in a Delphi technique previously. One participant was provided more explanatory material on request.

(b) Round Two

Preparation of the second questionnaire began shortly after the first completed Round One questionnaire had been received. Attached to the second questionnaire was a factual summary of the first round result. Respondents were asked to consider the new items generated in Round One; adding, modifying or removing variables as they wished. In addition, respondents were requested to indicate the number of nurses' career stages, the kind of breakdown and descriptors and the criteria that the participant would expect to see.

Previous Delphi studies indicated that there is usually a decrease in response rates for the second round of a Delphi study, particularly those involving voluntary participation. For this reason and because of the increasing length of the Round Two questionnaire, the researcher anticipated a decreasing response rate. In fact, all participants completed the questionnaire. They were also asked to indicate their reasons for participating and to provide suggestions to improve the Delphi study. Reasons included the likelihood of a

direct benefit to the nursing profession, curiosity, importance of the topic and a sense of personal contribution to the profession. The respondents in general felt the Delphi was well run. One respondent mentioned her initial uncertainty as she did not quite understand the methodology. However, after the second round, she felt fairly comfortable with the participation.

The majority of the responses (80%) indicated that, generally, participants felt they were receiving enough time to complete each round. The time taken for completion of the second questionnaire was thirty minutes to ninety minutes. The median time for completion was fifty minutes, which was approximately the time the researcher anticipated.

In the second round questionnaire, respondents were also requested to indicate the number of nurses' career stages, the descriptors and criteria that the participants would apply to these stages. The participants' responses were abstracted carefully and duplications among the respondents were eliminated. As a result, sixteen career/developmental stages in the professional nurse were described with sixteen variables identified. These are listed in Tables 4.1 and 4.2 respectively.

Table 4.1: Nurses' Career/Developmental Stages Identified in Delphi Round 2

1. Beginning Practitioner
2. Developing Practitioner
3. Experienced Practitioner
4. Stage 1 (1-2 yrs after Graduation)
5. Stage 2 (2-5 yrs after Graduation)
6. Stage 3 (5 yrs onwards after Graduation)
7. Clinical Practitioner Role
8. Education Role
9. Administration Role
10. Consultancy Role
11. Mentor
12. Learner/Student Stage
13. Dependency/New Graduate Stage
14. Conformity Stage
15. Comfortable/Independent Stage
16. Static (Resistant to change) Stage

Table 4.2: List of Variables of Nurses' Career/Developmental Stages in Delphi Round 2

1. Physical Age
2. Sex
3. Years of Service - Continuous
4. Years of Service - Disrupted
5. Level of Position Held
6. Nature of Position Held
7. Setting in which Position is held
8. Education/Academic Awards
9. Nursing Qualifications
10. Geographic Location of Work
11. Place of Residence
12. Access to Major Clinical and Education Resources
13. Non Nursing Employment
14. Professional Involvement (Committee, Association)
15. Professional Involvement - Non Nursing
16. Family Involvement (Married, Children)

(c) Round Three

The questionnaire for Round Three consisted of two parts. In part one, respondents were requested to rate the relative contribution of each variable identified in terms of its importance to the nurses' career stages. Using the split-100 procedure, in form of dollar voting, respondents were instructed to distribute one hundred dollars ($100) among the variables so that the most important variables received the most dollars.

Part two of the questionnaire consisted of a list of career/developmental stages of the professional nurse submitted by participants. Respondents were requested to rate these career/developmental stage descriptors in terms of:

a. Importance:

   i. Very Important - most relevant to the developmental stages.

   ii. Important - is relevant to the developmental stages.

   iii. Slightly Important - insignificantly relevant to the developmental stages.

   iv. Unimportant - not relevant to the developmental stages.

b. Confidence: that the career/developmental stage genuinely occurs, and is not just a figment or invention:

   i. Certain - that is a valid developmental stage.

   ii. Mostly Reliable - as a valid developmental stage.

   iii. Risky - many incorrect inferences can be drawn.

   iv. Unreliable - of no use as a decision base.

Importance and Confidence scale scores were subsequently computed. The career/developmental stage that respondents indicated to be very important was given four (4) points, the important column three (3) points, the slightly important column two (2) points and unimportant column one (1) point. A similar scoring method was applied to the Confidence Scale.

The underlying intentions of using Importance and Confidence Scales were to identify the best or most genuine examples of nurses' career stages. The two dimensional rating approach was adopted to minimise the risk in which an invalid item, though important as judged by the panel, or a true item which is insignificant, might accidentally be included in the main study. In addition, no neutral answer was allowed in the two Scales. The researcher believes a neutral position offers very little information in decision and judgement debates and it is usually desirable to force the respondent to think the issues through to a decision. In other words, the lack of a neutral point promotes a debate which is in line with developing pros and cons as one primary objective in this study.

All the respondents returned questionnaires within the time requested. The dollar voting accounted for a good deal of variance, with ten variables obtaining less than the mean score. However, none of the 16 variables were plainly irrelevant and therefore were all included for further voting. The results of dollar voting are shown in Table 4.3. Round 3 also revealed different opinions among the panel members in relation to the importance and validity of the career/developmental stages. Some nurses' career/developmental stages were removed because they did not receive sufficient votes. The results are shown in Table 4.4 with the distribution of career stages on Importance and Confidence scales in Figure 4.1.

Table 4.3: Result of Dollar Voting in Delphi Round 3

Variables	Mean Dollars Distributed (N=5)	S.D.
1. Physical Age	5.42	3.4
2. Sex	3.85	2.6
3. Years of Service/ Experience - Continous	10.85	3.2
4. Years of Service - Distrupted	4.85	2.8
5. Level of Position Held	10.65	3.5
6. Nature of Position Held	8.87	3.3
7. Setting in which Position Held	4.22	2.6
8. Education/Academic Awards	11.95	4.1
9. Nursing Qualifications	12.25	4.4
10. Geographic Location of Work	4.82	4
11. Place of Residence	2.22	1.8
12. Access to Major Clinical and Education Resource	4.42	2.7
13. Non Nursing Employment	2.42	1.9
14. Professional Involvement (Committee, Association)	6.85	3.2
15. Professional Involvement - Non Nursing	2.31	1.8
16. Family Involvement (Married, Children)	3.56	2.1

Table 4.4: Result of the Importance and Confidence Scales in Delphi Round 3

Variables	Importance Scale			Confidence Scale		
	Total Score	Mean Score (n=5)	S.D.	Total Score	Mean Score (n=5)	S.D.
1. Beginning Practitioner	15	3	1.2	17	3.4	1.1
2. Developing Practitioner	18	3.6	1.4	18	3.66	1.2
3. Experienced Practitioner	16	3.2	1.3	19	3.8	1.3
4. Stage 1 (1-2 years after Graduate)	11	2.2	1.6	14	2.8	1.7
5. Stage 2 (2-5 years after Graduate)	12	2.4	1.5	15	3	1.7
6. Stage 3 (5 years onwards after Graduate)	12	2.4	1.3	14	2.8	1.6
7. Clinical Practitioner	17	3.4	1.8	14	2.8	1.4
8. Education Role	17	3.4	1.8	15	3	1.5
9. Administration Role	17	3.4	1.8	15	3	1.7
10. Consultancy Role	17	3.4	1.7	14	2.8	1.6
11. Mentor	16	3.2	1.6	12	2.4	1.5
12. Learner/Student Stage	12	2.4	1.3	14	2.8	1.4
13. Dependence/New Graduate Stage	14	2.8	1.4	12	2.4	1.3
14. Conformity Stage	12	2.4	1.2	12	2.4	1.3
15. Comfortable/Independent Stage	16	3.2	1.6	12	2.4	1.2
16. Static (Resistant to Change) Stage	16	3.2	1.5	12	2.4	1.3

(d) Round Four

The results of voting at Round Three were sent to the panel members for their reference together with questionnaire 4. A Relevance Test was conducted in this round. The panel members were requested to respond to each variable and to rate its relevance. Relevance was defined in the instructions as "contributing to" to the nurses' career/developmental stages. If the answer was not relevant, no further action was required. Alternatively, if the respondents considered the variable was relevant, they were asked to provide specific characteristics or features of the variable. An example was provided in the questionnaire 4 for the panel members. In addition, the panel members were requested to decide when the Delphi study should be ended.

The final response rate was 100%. All respondents indicated that if over 50% of the participants on any round voted for the Delphi to end, that would be the last round. Panel members also commented that if there was lack of change, or stable votes from round to round, no further round would be required.

During this round, the Relevance Test accounted further for a marked variance. The results are shown in Table 4.5 which also provided some comparison with the result of the dollar voting in Round 3. In regard to the characteristics of the variables, a large amount of material was generated as shown in Table 4.6.

Table 4.5: Result of the Relevance Test in Delphi Round 4

Key - Career/Developmental Stages:

1 = Beginning Nurse Practitioner
2 = Developing Nurse Practitioner
3 = Experienced Nurse Practitioner
4 = Clinical Practitioner
5 = Education Role
6 = Administration Role
7 = Consultancy Role

Variables	Career/ Develop- mental Stages	% of Panel on Relevance Voting	Group Mean %	Dollar Voting in Round 3 mean=6.25
Physical Age	1	40		
	2	40		
	3	40		
	4	20		
	5	0		
	6	40		
	7	20	28.5	5.425
Sex	1	20		
	2	20		
	3	20		
	4	20		
	5	20		
	6	20		
	7	20	20	3.85
Years of Service	1	80		
	2	100		
	3	100		
	4	80		
	5	80		
	6	80		
	7	80	85.7	10.85
Level of Position	1	80		
	2	100		
	3	80		
	4	80		
	5	100		
	6	100		
	7	60	85.7	10.65

Variables	Career/ Develop- mental Stages	% of Panel on Relevance Voting	Group Mean %	Dollar Voting in Round 3 mean=6.25
Nature of Position	1	80		
	2	60		
	3	80		
	4	80		
	5	100		
	6	80		
	7	80	68.5	8.87
Access to Major Clinical & Education Resource	1	80		
	2	60		
	3	80		
	4	80		
	5	80		
	6	80		
	7	80	77.1	4.45
Non Nursing Employment	1	40		
	2	20		
	3	0		
	4	20		
	5	20		
	6	0		
	7	0	14.3	2.425
Professional Involvement	1	60		
	2	100		
	3	100		
	4	100		
	5	100		
	6	100		
	7	100	94.3	6.85
Family Involvement	1	40		
	2	40		
	3	40		
	4	40		
	5	40		
	6	40		
	7	40	40	3.5625

Variables	Career/ Developmental Stages	% of Panel on Relevance Voting	Group Mean %	Dollar Voting in Round 3 mean=6.25
Setting	1	80		
	2	60		
	3	60		
	4	80		
	5	100		
	6	80		
	7	80	77.1	4.225
Education/Academic Awards	1	100		
	2	100		
	3	80		
	4	60		
	5	100		
	6	100		
	7	80	88.5	11.95
Nursing Qualification	1	100		
	2	100		
	3	100		
	4	100		
	5	100		
	6	100		
	7	100	100	12.25
Geographic Location	1	20		
	2	40		
	3	60		
	4	60		
	5	60		
	6	80		
	7	20	48.5	4.825
Place of Residence	1	0		
	2	20		
	3	40		
	4	40		
	5	40		
	6	40		
	7	20	28.5	2.25

(e) Round Five

The Round 5 questionnaire consisted of three primary sections.

In section one, the main activity was voting on the characteristics of variables submitted by the participants. The procedure modified from Likert (1932) was adopted; the panel members were asked to respond on a four point scale (most important, important, slightly important, not important) to the characteristics of variables and career stages. Scores of, 4, 3, 2, and 1 respectively were given from best to worst description.

In section two, using the magnitude-estimation procedure, the panel members were instructed to find the most important variable and give it a rating of 100. They were then asked to rate the other variable in terms of the most important one, so that a variable which the respondent felt was half as important as the most important was to receive a rating of 50.

In section three, the two dimensional rating procedures of Importance and Confidence scales were repeated to ascertain the reliability of the nurse career/development stages to be adopted in this study. Four of the five participants in Round 5 voted for the Delphi to end. In accordance with previous decisions, Round 5 was the last round of the Delphi procedures.

Summary results computed from the four point rating of characteristics of variables in Round 5 is given in Table 4.6, while Tables 4.7 and 4.8 indicate the summary results computed from the Magnitude Estimation Procedure; and the Importance and Confidence Scales at second testing.

Table 4.6: Characteristics of the Variables Provided by the Delphi Panel in Round 4 and Result of four-point rating of characteristics of Variables in Delphi Round 5

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
Beginning Practitioner	Physical Age	20-50 years	18	1.6	0.9
	Sex	Male	9	1.8	1.1
		Female	6	1.2	0.8
	Years of Service/ Experience	0-2 years	12	2.4	1.2
		0-3 years	17	3.4	1.3
		0-4 years	10	2.0	1.1
	Level of Position	Team member of restricted role	17	3.4	1.7
		Junior position	12	2.4	1.2
		1st-5th year RN	12	2.4	1.2
	Nature of Position	Ward situation	13	2.6	1.3
		Speciality area	11	2.6	1.3
		Collaborative Nursing team	14	2.8	1.4
	Setting in Which Position Held	Hospital	13	2.6	1.2
		Community	10	2.0	1.1
		Corporation/Co setting	9	1.8	1.1
	Education & Academic Awards	Certificate	17	3.4	1.7
		Diploma	19	3.8	1.6
		Degree	14	2.8	1.2
		Tertiary qualifications	13	2.6	1.4
		Post basic course	9	1.8	1.2
		Personal development included in qualification	13	2.6	1.3
	Nursing Qualification	First registration as RN	18	3.6	2.1
		Post basic qualifications	7	1.4	1.2
		Speciality	10	2.0	1.3
	Geographic Location of Work	Opportunity for range of experience	13	2.6	1.2

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Access to Clinical & Education Resources	Library	11	2.2	1.2
		College	8	1.6	1.1
		Over 50 km away	10	2.0	1.3
		Knowledge of future career pathway	6	1.2	1.1
	Non Nursing Employment	Part time work	6	1.2	1.2
		Personal Development	9	1.8	1.2
	Professional Membership	Membership	13	2.6	1.4
		Stimulation of others	9	1.8	1.3
		Professional and union involvement	8	1.6	1.3
		Nursing organisation	17	3.4	2.1
	Family Involvement	Dependent spouse	8	1.6	1.1
		Degree of commitment to professional	15	3.0	1.6
Developing Practitioner	Physical Age	25-30 years	11	2.2	1.2
		20-50 years	8	1.6	1.3
	Sex	Male	5	1.0	0.8
		Female	5	1.0	0.8
	Years of Service Experience	Minimum of 3 years	18	3.6	1.5
		Development of Specialist skills	10	2.0	1.2
		Minimum of 5 years	6	1.2	0.9
	Level of Position Held	RN	17	3.4	1.7
		Charge Nurse	8	1.6	1.1
		Senior nurse in team	10	2.0	1.3
		Opportunity for responsibility	19	3.8	2.1
	Nature of Position	Responsibility increased beyond beginner	20	4.0	2.2

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Setting in Which Position Held	Opportunity to develop	20	4.0	2.1
		Specialist higher order skill	10	2.0	1.2
		Private Hospital	7	1.6	1.1
		Public Hospital	7	1.6	1.2
		Collaborative Team	10	2.0	1.3
	Education/ Academic Awards	Tertiary Post-grad work	10	2.0	1.1
		Studying or completing further qualification	13	2.6	1.3
		Personal Development	13	2.6	1.3
		Certificate	14	2.8	1.2
		Diploma	15	3.0	1.6
		Degree	15	3.0	1.7
	Nursing Qualification	Additional nursing qualif.	18	3.6	2.1
		Post basic awards	10	2.0	1.6
	Geographic Location of work	Access to unit offering specialist care 20-50 km	9	1.8	1.1
	Place of Residence	Ability to seek centre that most meets need for professional development	10	2.0	1.2
	Access to Clinical/ Education Resource	Library	11	2.2	1.1
		College	12	2.4	1.3
		Encouragement by employer	14	2.8	1.5
		Time off from work	12	2.4	1.2
	Professional Involvement	Member on Committee	15	3.0	1.5
		Stimulation of profession	15	3.0	1.5
	Family Involvement	Commitment to professional role	13	2.6	1.2
		Dependents	11	2.2	1.1
		Spouse	9	1.8	1.3

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
Experienced Practitioner	Physical Age	Over 30 years	9	1.8	1.3
	Sex	Male	5	1.0	0.8
		Female	5	1.0	0.8
	Years of Service/ Experience	Over 10 years	17	3.4	1.7
		Over 30 years	7	1.4	1.2
		Over 5 years	9	1.8	1.6
	Level of Position Held	Charge Nurse	9	1.8	1.2
		Supervisor	8	1.6	1.3
		Director of Nursing	6	1.4	1.2
		Team Leader	18	3.6	2.4
		Senior position in clinical	19	3.8	2.2
		Senior position in education	9	1.8	1.5
	Nature of Position	Clinical area	16	3.2	2.1
		Administration	15	3.0	1.9
		Education	10	2.0	1.1
		Research	11	2.2	1.4
	Setting in Which Position Held	Private	5	1.0	0.9
		Public	6	1.2	1.0
		Opportunity for experience that extends skill levels	15	3.0	1.6
	Education/ Academic Awards	Degree	14	2.6	1.4
		Diploma	14	2.8	1.3
		Certificate	14	2.8	1.1
		Management oriented study	13	2.6	1.4
	Nursing Qualification	Post basic	19	3.8	2.1
		Registered Nurse	14	2.8	1.6
		Updated Certificate	6	1.2	1.1
	Geographic Location of Work	Over 100 km	8	1.6	1.2
		Access to clinical and education facilities	12	2.4	1.1
		Near to place of home & study	11	2.2	1.1

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Place of Residence	Possibility of career mobility to enhance professional development	13	2.6	1.3
		Close to work and study	12	2.4	1.1
	Access to Major Clinical & Education Resources	Ability to develop further skills	14	2.8	1.5
		Time off to attend available education centres	12	2.4	1.2
		10-30 km away	6	1.2	1.1
		31-50 km away	6	1.2	1.0
	Professional Involvement	Membership	17	3.4	2.1
		Executive position	11	2.2	1.8
		Stimulation of peers and professional leader	17	3.4	1.9
	Family Involvement	Increasing time with family	9	1.8	1.1
Clinical Practitioner	Physical Age	Above 25 years	9	1.6	1.2
	Sex	Male	5	1.0	0.8
		Female	5	1.0	0.8
	Years of Service	3 years plus	7	1.4	1.2
		5-10 years	13	2.6	1.1
		10-15 years	10	2.0	1.1
		15-20 years	5	1.0	0.9
	Level of Position	Patient Centre	16	3.2	1.6
		Non administrative	9	1.8	1.3
		Able to exert influence over decisions relating to patient care	18	3.6	2.1
	Nature of Position	Consultant	12	2.4	1.2
		Ward Nurse	19	3.8	2.1
		Community Nurse	15	3.0	1.5

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Setting in Which Position Held	Speciality ward	10	2.0	1.1
		General ward	11	2.2	1.1
		Opportunity to use and extend existing skills	15	3.0	1.8
		Hospital	10	2.0	1.5
		Community	10	2.0	1.6
	Education/ Academic Awards	Certificate	16	3.2	1.1
		Diploma	15	3.0	1.3
		Degree	12	2.4	1.7
	Nursing Qualification	Registered Nurse	15	3.0	1.2
		Specialist post basic qualif.	18	3.6	1.3
	Geographic Location of Work	Close to work	9	1.8	1.5
		Over 30 km	7	1.4	1.3
		Clinical areas providing resources for professional role & development	12	2.4	1.8
	Place of Residence	Ability to select about employment	12	2.4	1.5
		Availability of recreation at home	8	1.8	1.2
	Access to Major Clinical & Education Resources	Time available to study	12	2.4	1.1
		Course available	12	2.4	1.2
		College	12	2.4	1.1
		Library	13	2.4	1.2
		Ability to follow formal and informal study	14	2.8	1.3
	Professional Involvement	Stimulation of other professional leaders	18	3.6	1.8
		Membership	15	3.0	1.1
		Executive member	7	1.4	1.2
	Family Involvement	Dependents	9	1.8	1.2
		Spouse	8	1.6	1.3

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
Education Role	Sex	Male	5	1.0	0.9
		Female	5	1.0	0.9
	Years of Service/ Experience	Above 5 years	9	1.8	1.2
		5-10 years	12	2.4	1.6
		10-15 years	12	2.4	1.4
		Clinical credibility	19	3.8	2.3
	Level of Position Held	Seen as having credibility and influence	14	2.8	1.2
		Clinical teacher	16	3.2	2.5
		Clinical preceptor	15	3.0	2.3
	Nature of Position	Teacher	18	3.6	2.1
		Team leader	12	2.4	1.5
	Setting in Which Position Held	Provide opportunity for teaching to occur	16	3.2	1.6
		Hospital	8	1.6	1.2
		Community	8	1.6	1.2
		Private hospital	8	1.6	1.2
		Public hospital	9	1.8	1.3
		College	9	1.8	1.6
	Education/ Academic Awards	Tertiary qualification	19	3.8	2.1
		Certificate	13	2.6	1.2
		Diploma	15	3.0	1.5
		Degree	12	2.4	2.1
		Academic credibility	19	3.8	2.2
	Nursing Qualification	Tertiary nursing qualif.	16	3.2	2.1
		Registered nurse	15	3.0	1.2
		Specialist	14	2.8	1.4
		Post basic	13	2.6	1.6
	Geographic Location	Access to resources to support teaching role	13	2.6	1.6
		Close to work	8	1.6	1.2

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Place of Residence	Ability to be selective about employment	14	2.8	1.4
		Quiet and comfortable	11	2.2	1.6
		Much of work/preparation is done at home	10	2.0	1.6
	Access to Major Clinical & Education Resources	Access to resources to support teaching role	14	2.8	2.1
		Library	12	2.4	1.8
		College	12	2.4	1.8
		Over 30 km	9	1.8	1.6
		Time available	12	2.4	1.6
		Course available	12	2.4	1.7
	Professional Involvement	Active membership	18	3.6	1.2
		Executive	11	2.2	1.8
		Stimulation of peer and professional leaders	18	3.6	2.4
	Family Involvement	Family relationship competed for time	11	2.2	1.8
Administration Role	Physical Age	30-40 years	10	2.0	1.6
		40-50 years	9	1.8	1.5
	Sex	Male	5	1.0	0.9
		Female	5	1.0	0.9
	Years of Service/ Experience	10-20 years	16	3.2	1.4
		20-25 years	8	1.6	1.6
		5 years plus	9	1.8	1.6
		Broad experience	15	3.0	1.4
	Level of Position Held	Ability to influence decisions especially allocation of resources	20	4.0	2.1
		Charge nurse	12	2.4	1.4
		Supervisor	12	2.4	1.4
		Director of Nursing	12	2.4	1.4
		Upward career path	11	2.2	1.6

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Nature of Position Held	Autonomy	18	3.6	1.2
		Security	7	1.4	1.1
		Status	7	1.4	1.1
		Nursing administration, as distinct from general clerical work	10	2.0	1.1
	Setting in Which Position Held	Opportunity for professional development	18	3.6	1.8
		Private hospital	7	1.4	1.1
		Public hospital	7	1.4	1.1
		Large institution	10	2.0	1.6
	Education/ Academic Awards	Degree in administration or similar	13	2.6	1.3
		Personal development, wider vision	15	3.0	1.5
		Tertiary	16	3.2	1.7
		Certificate	13	2.6	1.4
		Diploma	14	2.8	1.6
		Degree	13	2.6	1.9
	Nursing Qualification	Tertiary nursing award	18	3.6	1.6
		Post basic qualification	16	3.2	1.6
	Geographic Location of Work	Opportunity for personal development	11	2.2	1.4
		City	6	1.2	1.1
		Country	6	1.2	1.1
		Close to work	12	2.4	1.6
	Place of Residence	Ability to select employment	12	2.4	1.8
		Suitable for entertaining	9	1.8	1.6
	Access to Major Clinical & Education Resources	Library	12	2.4	1.4
		Tertiary institution	12	2.4	1.4
		Continuing professional development	13	2.6	1.1

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Professional Involvement	Stimulation of interaction with peers and professional leaders	19	3.8	1.4
		Membership(s) professional organisation	18	3.6	1.4
		Executive	12	2.4	2.1
		Active involvement	18	3.8	2.3
	Family Involvement	Child rearing responsibilities essentially complete (for time being)	8	1.6	1.4
Consultancy Role	Years of Service	Credibility in the field	18	3.6	1.1
		5 years plus	15	3.0	1.2
		15-20 years	9	1.8	1.8
	Level of Position	Senior position	12	2.4	
		Ability to influence decisions	19	3.8	1.8
	Nature of Position	Consultancy as primary role	19	3.8	1.2
		Experience in particular area	19	3.8	1.2
		Specialist	16	3.2	1.3
	Setting in Which Position Held	Diversity and depth of experience	13	2.6	1.6
		Community	7	1.4	1.1
		Private hospital	7	1.4	1.1
		Public hospital	8	1.6	1.2
	Education/ Academic Awards	Tertiary	19	3.8	1.6
		Certificate	13	2.6	1.4
		Diploma	15	3.0	1.4
		Degree	16	3.2	1.8
	Nursing Qualification	Professional credibility	15	3.0	1.2
		Teaching nursing award	9	1.8	1.6
		Post basic	17	3.4	1.4
		Specialist	19	3.8	1.5
	Geographic Location	Diversity and depth of experience	10	2.0	1.2

Career/ Developmental Stages	Variables	Characteristics	Four-point Rating Total Score	Mean = 2.5 (n=5)	S.D.
	Place of Residence	Ability to be selective about place of employment	12	2.4	1.6
	Access to Major Clinical & Education Resources	Remain current in professional field	14	2.8	1.2
		Library	11	2.2	1.6
		College	10	2.0	1.4
		Time off work	11	2.2	1.6
	Professional Involvement	Interaction with peers and professional leaders	19	3.8	2.1
		Member of professional organisation	18	3.6	1.6
		Executive	7	1.4	1.2

Table 4.7: Results of the Magnitude Estimation Procedures in Delphi Round 5

	VARIABLES	Magnitude Estimation Voting in Round 5 (Mean %)	S.D.
1.	Physical Age	38	16
2.	Sex	25	11
3.	Years of Service/Experience	74	28
4.	Level of Position Held	83	21
5.	Nature of Position Held	88	24
6.	Setting in which Position Held	56	31
7.	Education & Academic Awards	89	29
8.	Nursing Qualifications	89	18
9.	Geographic Location of Work	55	32
10.	Place of Residence	26	14
11.	Access to Major Clinical and Education Resource	42	22
12.	Non-Nursing Employment	18	11
13.	Professional Involvement (Committee, Association)	52	18
14.	Family Involvement	37	16

Table 4.8: Results of the Importance and Confidence Scales at Second Testing in Delphi Round 5

CAREER/DEVELOPMENTAL STAGES IN THE PROFESSIONAL NURSES	Importance Scale			Confidence Scale		
	Total Score	Mean (n=5)	S.D.	Total Score	Mean (n=5)	S.D
1. Beginning Practitioner	18	3.6	1.4	18	3.6	1.2
2. Developing Practitioner	18	3.6	1.4	19	3.8	1.3
3. Experienced Practitioner	18	3.6	1.3	19	3.8	1.2
4. Stage 1 (1-2 years after Graduate)	12	2.4	1.1	9	1.8	1.3
5. Stage 2 (2-5 years after Graduate)	12	2.4	1.1	10	2.0	1.2
6. Stage 3 (5 years onwards after Graduate)	11	2.2	1.2	11	2.2	1.2
7. Clinical Practitioner	15	3.0	1.8	11	2.2	1.4
8. Education Role	11	2.2	1.1	13	2.6	1.6
9. Administration Role	13	2.6	1.4	11	2.2	1.5
10. Consultancy Role	11	2.2	1.2	13	2.6	1.3
11. Mentor	12	2.4	1.2	12	2.4	1.4
12. Learner/Student Stage	12	2.4	1.3	9	1.8	1.2
13. Dependence/New Graduate Stage	15	3.0	1.6	12	2.4	1.7
14. Conformity Stage	11	2.2	1.2	10	2.0	1.2
15. Comfortable/Independent Stage	13	2.6	1.4	13	2.6	1.3
16. Static (Resistant to Change) Stage	10	2.0	1.1	8	1.6	1.1

2.3 Analysis of Data Relating to Identification of Nurses' Career Stages and Variables

The Delphi was designed to provide an opportunity to seek consensus about the nurses' career/developmental stages and to evaluate quantitatively the degree of uncertainty that existed about the nursing profession. In order that the nurses' career/developmental stages could be identified by the nursing experts in such a way that consensus agreements could be achieved, the best examples and descriptions of career stages and variables were required.

The two dimensional approach of the Importance Scale and Confidence Scale, as indexes of the nursing experts' judgement, provided a significant indicator in identifying the nurses' career stages. Using the total scores, the mean score of each career stage identified by the panel experts at first testing and eight weeks later at second testing were computed and summarised in Table 4.9. Although sixteen career stages were generated initially by the panel, only three career stages, namely, the Beginning Nurse Practitioner, the Developing Nurse Practitioner and the Experienced Nurse Practitioner unanimously achieved higher mean scores from these two scales. A visual display of these results can be seen in Figure 4.1 and Figure 4.2. The three career stages of the Beginning Nurse Practitioner, the Developing Nurse Practitioner and Experienced Nurse Practitioner were, therefore, chosen for the purpose of this study on the basis of consistent higher mean scores in both scales on both testing occasions.

Table 4.9: Summary of Career/Developmental Stage Voting Results at the First and Second Testing

CAREER/DEVELOPMENTAL STAGES IN THE PROFESSIONAL NURSES	Importance Scale Mean Score (n = 5)		Confidence Scale Mean Score (n = 5)	
	First Round	Second Round	First Round	Second Round
1. Beginning Practitioner	3.0	3.6	3.4	3.6
2. Developing Practitioner	3.6	3.6	3.66	3.8
3. Experienced Practitioner	3.2	3.6	3.8	3.8
4. Stage 1 (1-2 years after Graduate)	2.2	2.4	2.8	1.8
5. Stage 2 (2-5 years after Graduate)	2.4	2.4	3.0	2.0
6. Stage 3 (5 years onwards after Graduate)	2.4	2.2	2.8	2.2
7. Clinical Practitioner	3.4	3.0	2.8	2.2
8. Education Role	3.4	2.2	3.0	2.6
9. Administration Role	3.4	2.6	3.0	2.2
10. Consultancy Role	3.4	2.2	2.8	2.6
11. Mentor	3.2	2.4	2.4	2.4
12. Learner/Student Stage	2.4	2.4	2.8	1.8
13. Dependence/New Graduate Stage	2.8	3.0	2.4	2.4
14. Conformity Stage	2.4	2.2	2.4	2.0
15. Comfortable/Indpendent Stage	3.2	2.6	2.4	2.6
16. Static (Resistant to Change) Stage	3.2	2.0	2.4	1.6

Figure 4.1: Distribution of Career/Developmental Stages On Importance and Confidence Scales at First Testing

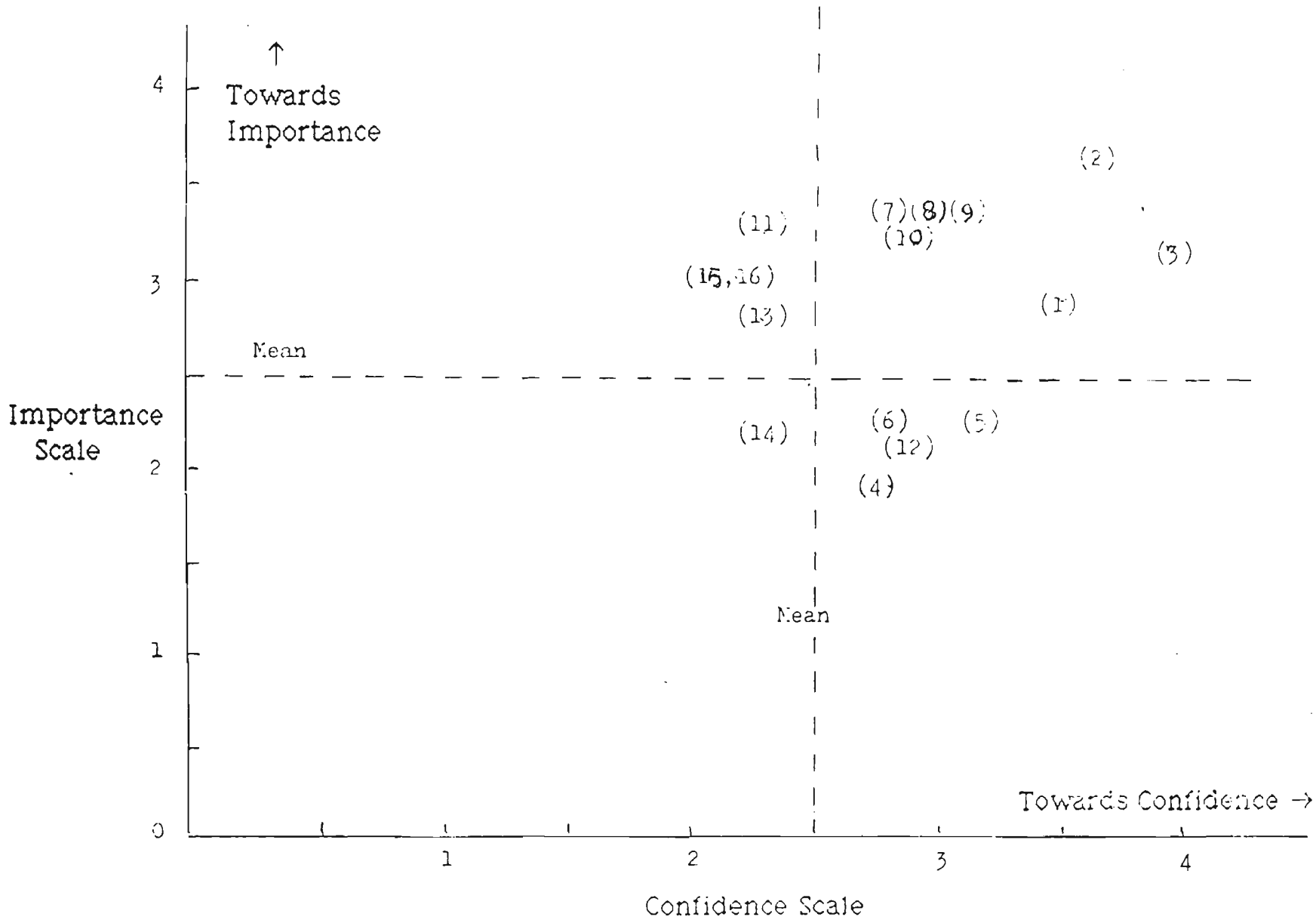
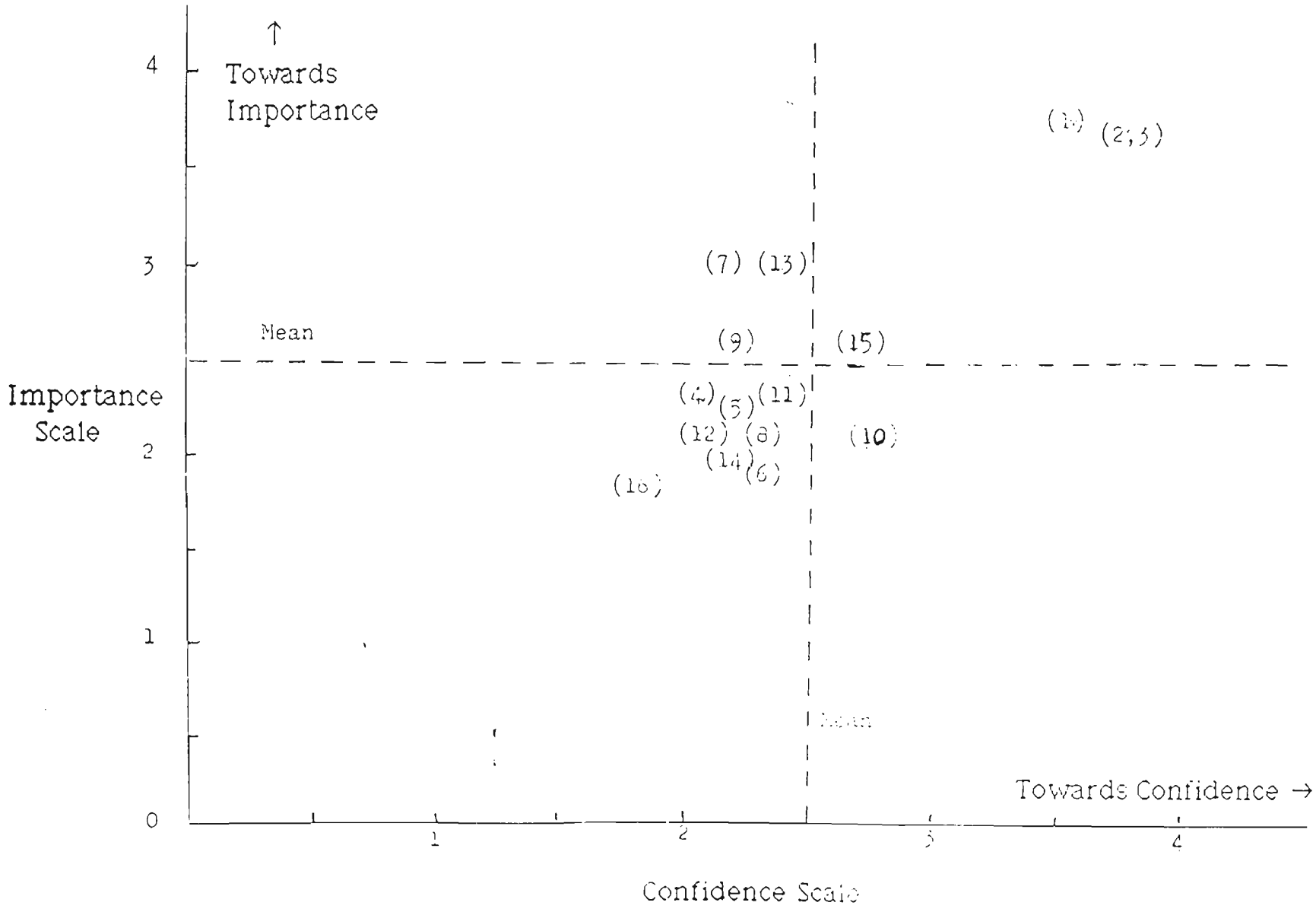


Figure 4.2: Distribution of Career/Developmental Stages On Importance and Confidence Scales at Second Testing



In regard to the variables, three different rating methods (the Dollar Voting, Relevance Test and the Magnitude Estimation Procedures) were employed in order to test the variable reliability and stability over scaling technique. Ratings were obtained on each round, where the results of the previous round were fed back between rounds. Again, only those variables with higher mean scores in all three ratings were included in this study. The variables included were years of service and experience, level of position held, nature of position held, education and academic awards, nursing qualifications and professional involvement. Product moment correlations were further applied to the mean ratings in the three rounds. The correlation between the mean Dollar Voting and mean Relevance Test was 0.82; the correlation between the mean Relevance Test and the Magnitude Estimation Test was 0.78. A summary of voting on the variables is included in Table 4.10

Table 4.10: Summary of Variables Voting Results at Various Round

	Magnitude Estimation Voting in Round 5 (Mean %)	Relevance Voting in Round 4 (Mean %)	Dollar Voting in Round 3 (Mean = 6.25)
1. Physical Age	38	28.5	5.425
2. Sex	25	20.0	3.85
3. Years of Service/Experience	74	85.7	10.85
4. Level of Position Held	83	85.7	10.85
5. Nature of Position Held	88	68.5	8.85
6. Setting in Which Position Held	56	77.1	4.225
7. Education & Academic Awards	89	88.5	11.95
8. Nursing Qualification	89	100.0	12.25
9. Geographic Location of Work	55	48.5	4.825
10. Place of Residence	26	28.5	2.25
11. Access to Major Clinical and Education Resource	42	77.1	4.45
12. Non-Nursing Employment	18	14.3	2.425
13. Professional Involvement (Committee, Association)	52	94.3	6.85
14. Family Involvement	37	40.0	3.625

In relation to the characteristics of variables, the mean scores of the four point rating were used to determine the "best" descriptions of the variables. The characteristics were included only if they received higher mean scores.

Based on the results of the Delphi study, three nurses' career stages were therefore established. Each of these stages, the Beginning Nurse Practitioner, the Developing Nursing Practitioner and the Experienced Nurse Practitioner, has its own profile which is summarised below.

A) The Profile of the Beginning Nurse Practitioner can be investigated through following key characteristics:

1. Has up to 3 years of service/experience.
2. Holds general education qualification of certificate, diploma or degree level.
3. Holds first registration as Registered Nurse.
4. Is employed in a setting that offers opportunity for broadening the range of experience.
5. Holds position in hospital ward situation, speciality area or collaborative nursing team.
6. Is a team member with restricted role in terms of responsibility.
7. Is uncertain with her role.
8. Needs guidance and advice in nursing decisions.
9. Relies upon external controls and adheres limits set by employing authority.
10. Is a member of a nursing organisation.

B) The Profile of the Developing Nurse Practitioner can be investigated through the following characteristics:

1. Has a minimum 3 years of service/experience.
2. Holds general educational qualifications of certificate, diploma, or degree level.
3. Holds or intends to study for additional nursing qualification.
4. Is a registered nurse with extended role and opportunity for responsibility.
5. Has the opportunity to develop specialist higher order skill.
6. Is able to identify and develop own nursing style.
7. Is developing capacity of critical thinking in nursing issues.
8. Is developing awareness of own strength, weakness and limit.
9. Attempts to establish autonomy through questioning of the established system.
10. Is a member of a nursing organisation.

C) The Profile of the Experienced Nurse Practitioner can be investigated through the following characteristics:

1. Has over 10 years of service/experience.
2. Holds general educational qualifications of certificate, diploma or degree level.
3. Has specialist experience/qualification in particular area.
4. Holds position in clinical or administrative area.
5. Is a team leader.
6. Has clinical credibility.
7. Has the ability to use and extend existing skill to a higher level.
8. Has knowledge of access to resource to support clinical role.
9. Is able to exert influence over decision relating to patient care.
10. Is a member of a nursing organisation.

2.4 The Beginning Nurse Practitioners

The Delphi technique revealed that among a group of nursing experts, there was a consensus of opinions that three career stages, namely the beginning nurse practitioners, the developing nurse practitioner and the experienced nurse practitioners, exist in the profession.

No doubt, continuing nursing education is important to all these groups. However, this researcher is particularly interested in the beginning nurse practitioner stage, especially at the point where the nursing student is newly graduated. That interest stems from his past teaching experience. Over a period of time, as staff development officer and supervisor, the researcher has been interviewing and counselling nurses about their experience after graduation. Of these nurses, some make the transition successfully but carry scars. Few manage the transition with ease and some have even bailed out of nursing. All of them talk about the needless frustration and most describe the experience with deep feelings reflecting some trauma associated with the change.

A graduation, like any transition, starts with an ending: and endings require giving up and letting go things that have been. What has ended for the new nurses are aspects of student identity and social relationships. In assuming registered nurses' responsibilities, the beginning nurse practitioners surrender an exclusive concentration on study and their relationships with other students.

Where previously they were responsible for themselves and assignments related to study, they now are responsible for a group of clients and overall patient care. They have exchanged a relatively care-free status for responsibilities and burdens often extending beyond a particular shift. They find that nursing work is rarely ever completed. The beginning nurse practitioners give up an acknowledged and accepted role in the student group and move into positions of uncertainty. The beginning nurse practitioners often mention that they feel they can handle things as long as their support systems remain intact. When these are disrupted, they encounter serious difficulties.

The transition also brings greater visibility and prestige as a professional worker. Although this may be exciting at first, beginning nurse practitioners often wish for the blessed anonymity of their newly graduated status. Everything they do becomes the subject of conversation in the hospital. The patient often tries to "test" them out. The eyes of nursing administration are on them, anxiously appraising and judging their progress. Staff members watch to see if they are competent.

The beginning nurse practitioners have a difficult period of adjustment. Often they meet frustration instead of satisfaction in their need to be of service. Sometimes, they receive complaints instead of appreciation from the patients and their visitors. Under these conditions, it is easy to feel guilty and inadequate. As some beginning nurse practitioners mention, no matter how they try they cannot satisfy everyone.

The sudden change to long working hours and shifts can disrupt their personal lives. Both their personal and professional lives can become unfulfilling.

The move into professional nursing is a move into a junior role in the hospital. Junior roles are inherently difficult. As Bridges (1980) points out, persons in junior positions tend to work at a hectic pace; they see their role as insignificant yet feel a heavy responsibility for keeping the system together and making it work. They find themselves confused and ambivalent on many issues in their attempts to be responsive both to the top peers and patients.

Persons in junior positions also tend to personalise their experiences, attributing whatever difficulties they are having to their own personal failings. In addition to self-blame, there is further a tendency for others to see the beginning nurse practitioners as hard working but not very competent. The hazard is, therefore, that the beginning nurse practitioners are often caught in the conflict between those at the top of the organization and those at the ward level, each pulling or pushing in an attempt to have their own needs met. Many beginning nurse practitioners resolve the conflict by supressing their own opinions and simply doing as they are told. They lose the respect of their supervisors. Others resolve the conflict by identifying with the patient, thus risking loss of objectivity in patient care.

One can begin to appreciate why the transitional period of the new nurse graduates can be traumatic. The problem is unnecessarily further complicated by unclear job descriptions and expectations. Too often the beginning nurse practitioner is attracted by the vague but shiny new registered nurse position, responding to the attractive advertisement or hospital brochure. She is often asked to put her faith in the nursing administration. A beginning nurse practitioner, particularly in a first appointment, responds all too easily to those appeals that touch her ego or her pride as a professional nurse. Unfortunately, the initiation process often fails to take account of the impact of cutting ties and moving into unknown groups. Discussion during the job interview commonly is not buttressed with

specific information about the position, nor are the expectations which nursing management holds made explicit. Job descriptions are often inadequate.

The rosy glow of graduation causes the beginning nurse practitioner to gloss over the disruption that is taking place, a disruption that remains below the conscious level until the "honeymoon" period wears out. This researcher's view is echoed by Kelley and Connor (1979) who provide an understanding of the emotional cycle experienced by the nurse involved in change. These authors contend that the emotional cycle is universal for any change, whether voluntary or involuntary. Understanding of the cycle can alert nursing administrators to potential problems that need to be addressed.Five stages are described.

In the first stage, dissatisfaction is low and enthusiasm high; a stage characterized by uninformed optimism and a feeling of sureness and certainty, a veritable honeymoon period. Beginning nurses at this stage are bubbling with enthusiasm; they simply do not, nor can they have sufficient information to be aware of all the problems that lie ahead. Enthusiasm serves a purpose, however, although uninformed; indeed it is essential if the nurse is to be sufficiently energised to take the change at all.

The dissatisfaction level rises as reality sets in, moving the person to the second phase of "informed pessimism". This phase is accompanied with heavy feelings of doubt and dismay. The beginning nurse practitioners experience the cutting of ties with fellow students and the sense of alienation. The time they are devoting to their work often causes deterioration in their personal lives. They may be burning out from feeling unacknowledged, unliked, unappreciated and unrewarded. These factors cause them to be at the most vulnerable stage of the change cycle and the one where bailout is most likely to occur.

As the new nurses work through this period, they move on to the stage of "hopeful realism", then experience the confidence of "informed optimism" and finally reach the satisfying final stage of "rewarding completion".

This researcher has yet to talk to new nurse graduates who felt they had a good systematic programme of follow-up during the transition process. Intentions may well have been good; but whether due to the lack of a systematic programme or the pressures of other activities, the general pattern is a brief orientation of the new nurse graduate and then spotty follow-up. Continuing education tends to be informal and ad hoc; learning is by trial and error. On the job training for the beginning nurse practitioners tends to be informal and often is not completed because of the pressure and priorities of other work. Few hospitals in the researcher's past experience provide systematic, formal continuing education. There are a few isolated examples on an otherwise barren landscape, but the norm seems to be an expectation that survival and development are individual matters.

This approach may be the result of preoccupation with other problems or a true unawareness of the costs of graduation trauma. Whatever the reason, lack of attention to continuing education is shortsighted and costly. Too often, the beginning nurse practitioners are given little attention by nursing management. They tend to be taken for granted rather than initiated into nursing ranks.

The frustration and pain of these new nurses have led the researcher to explore more fully the nature of the educational process and to rectify the problem and develop strategies to help those caught in the transition process. Although growth of any kind may be painful at times, the trauma of the transition after graduation experienced by many nurses appear to go beyond healthy growing pains.

For all of the above reasons, a study on the beginning nurse practitioner is timely. As a first step, an experimental curriculum was developed with the intention of minimising the traumatic aspects of new nurse transition and helping nurse graduates achieve the expected level of competence in a short period of time.

3. An Evaluation Research

This study is concerned with developing an appropriate curriculum based on the nurse's career stage. It is important, therefore, to explain the process by which the researcher can make judgements leading to the evaluation of such a curriculum.

Several major problems were encountered in the evaluation activities. These issues were best summarised by Knowles (1970) who points to four practical obstacles to evaluation of effectiveness of a continuing education programme. Knowles suggests:

1. Human behaviour is too complicated and the number of variables affecting it are too numerous for a person to be able to prove that it is the programme alone that produces desired changes.

2. The Social Sciences have not yet produced the rigorous research procedures and measurement instruments for getting at the outcomes of a programme.

3. Intensive and scientific evaluations require investments of time and money that many institutional policy makers are unwilling to make.

4. Adult education is an open system in which participation is voluntary, so that the worth of a programme is more readily tested by the degree of persistence and satisfaction of its clientele.

   (Knowles 1970 p. 220.)

While recognising Knowles' reservations on programme evaluation, the researcher believes evaluation is an integral part of life itself and in continuing nursing education, evaluation provides a continuing guide toward immediate and further action. Provided the problems above are at least acknowledged and the pitfalls that may lead to errors are considered, there is no good reason why evaluation activities could not be initiated. This section therefore investigates some of the current issues in evaluation, followed by a review of evaluation approaches that have been developed.

3.1 Operational Definition

In examining the major problem with curriculum evaluation one can identify the lack of an agreed definition as a major concern. For instance Guba (1969) outlined three types of evaluation definitions as (1) measurement (2) congruence between performance and objectives and (3) professional judgement. Worthen and Sanders (1973) in describing a framework for the planning of evaluations presented eight different evaluation models and their associated definitions. While most of these definitions can be subsumed under the terms used by Guba, two additional definitions were added: evaluation as description and judgement; and evaluation as provider of information for decision making.

Suchman (1983), in discussing the lack of a consensus definition, made the basic distinction between "evaluation" and "evaluative research". He considered evaluation to be the process of judging the worth of a product, process, or a programme which does not necessarily require systematic procedures or evidence supportive of the judgement. Evaluative research on the other hand is "utilization of scientific research methods and techniques for the purpose of making an evaluation ... evaluative research refers to those procedures ... which increases the possibility for proving rather than asserting the worth of some social activity". (Suchman 1983, p. 8.)

Perhaps some of these issues may be reconceptualised through a distinction between the terms evaluation, programme evaluation and evaluative research. The first and last terms

would follow Suchman's distinction and programme evaluation would be a term not quite as broad as evaluation but broader than the concept of evaluation research. Programme evaluation would be seen as a series of activities which may or may not require rigorous scientific research (experimental) procedures and would include instances that do not incorporate rigorous social science methodologies. Programme evaluation may thus be seen as incorporating both evaluation research and what Freeman (1977) referred to as "para-evaluation activities". From the perspective of practitioners at the local level, this definition of programme evaluation would be less restrictive than the concept of evaluation research and more rigorous, more data based and more decision oriented than the global concept of evaluation.

3.2 A "Product Evaluation"

Although it is possible to categorise evaluation designs according to the uses to which the data are to be put, it is also possible to examine the approaches in terms of the philosophical and methodological positions taken by their proponents. There are those whose approach to evaluation is based on Tyler's (1942) ideas. In this approach, the major steps in evaluation are the establishment and classification of broadly stated goals and objectives, the definition of objectives in behavioural terms, the specification of situations appropriate to the achievement of the objectives, the selection of appropriate measures, the collection of student outcome data and, finally, the comparison of the data with the behavioural objectives. In this system outlined, the decisions to be made become a function of congruence between the stated objectives and the measured outcomes. As evaluation is an on going and cyclical process in this system, feedback is used to refine and redefine the programme's objectives with each phase of the cycle leading to a more sharply defined programme.

As distinct from Tyler, there are those, such as Stufflebeam (1978), who view evaluation as a means for a continuous flow of information to enable decision-makers to modify their decisions. Stufflebeam's approach can be conceptualised in terms of four types of

decision and the associated evaluation strategies. They are (1) the planning decision (intended ends) - context evaluation, (2) programming decision (intended means) - input evaluation, (3) implementing decision (actual means) - process evaluation and (4) recycling decision (actual ends) - product evaluation. The four types of evaluation in this model can be conveniently labelled - context, input, process and product.

This evaluation design provides programme planners with information that leads to informed decisions. Context evaluation provides data for the determination of the appropriate goals and objectives of the programme. Input evaluation provides data necessary for appropriate allocation of resources to meet the defined programme goals and objectives. Process evaluation provides data for implementation decision and programme monitoring. Finally, product evaluation provides data necessary for measurement and intepretation of the degree to which project objectives are met.

Although Stufflebeam describes four types of evaluation, he relies on a single approach for the conduct of all these evaluations. His approach consists of five major components: (1) information collection; (2) information organisation; (3) information analysis; (4) information reporting and (5) administration of evaluation. Information collection requires specification of subjects, instruments, sampling, administration procedures and scheduling. Information organisation and analysis requires appropriate data processing format and selecting a means for data analysis. Reporting of information requires specification of the audiences for the evaluation reports, the means and the schedule of dissemination activities. Administration of the evaluation requires planning and conducting the evaluation design by specifying resources, schedules, personnel and budget.

From the researcher's point of view, having rejected Tyler's linear approach, as discussed previously, Stufflebeam's evaluation approach provides an attractive theoretical framework. Although the present study is neither concerned with resource, time and

budget requirements as in the case of an "input evaluation", nor is it concerned with day-to-day management as in "process evaluation", it does examine the relationship between the outcomes and the context. Here, we refer to the development of a curriculum that is related to nurses' career stages. In this sense it is probably best classified as "product evaluation".

Perhaps the decision to adopt this "product evaluation" approach is further supported by Scriven (1977) and Stake (1978). These authors, in their discussions on the methodology of evaluation suggest that a major goal for evaluation is the determination of the worth or merit of the programme. The function of an evaluator is therefore to provide a judgement as to the product's value.

Hence, in evaluation studies, the criterion measures used by the evaluator against which the merit of a programme will be judged, are crucial. The value of the curriculum in the eyes of students may be different from that perceived by the educator. Even among the educators, the standards that are used to judge worth may differ. The evaluator's responsibility in this case is to define the merit of the curriculum and to determine appropriate criterion measures. With some of these issues in mind, the next chapter describes the development of evaluation measures used in this study.

CHAPTER FIVE

RESEARCH DESIGN

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1. Methodological Considerations

The appropriateness of an evaluation design for gathering information on relationships among variables hinges on many things. The level of precision needed in measuring variables is one of the more important considerations. A general model for attributing cause and effect has long been available in science, but its explicit statement and popularization is probably most closely associated with the work of Fisher (1925).

The essence of the experimental design is the notion of two or more groups that are equal on relevant characteristics before some treatment (experimental manipulation, intervention and so on) is applied to one of the groups. In order to know whether the treatment has had an effect, the groups are usually compared before and after the treatment. Presumably, the variable that is expected to change with the treatment is measured before the experiment and subsequently. In the ideal circumstance, outcomes attributed to the treatment occur if there is an effect, but not otherwise; the pattern of mean scores for experimental and control groups indicating accordingly.

It is often suggested that the experimental method is the most powerful one for an explanatory science, that is, demonstration of cause and effect relationships requires experimentation. However, it is more useful than this. In a situation in which one does not want to take serious risks by wrongly accepting or rejecting a null hypothesis, because the variable one has defined is too crude, it might be best not to go beyond an associative statement.

Some important limitations occur in experimental procedures as applied to the social sciences. Unfortunately, in accepting experimental models from the physical sciences,

social scientists have often ignored some of the real differences in measurement and control. It is well to point out some of these differences, as they are important. The value of the experimental approaches may often be limited because of these circumstances. In essence, there are questions that should be raised every time an experimental study is examined. For instance, does one know whether the experimental group is indeed equal to the control group?

The most common experimental design involves a manipulation of one variable and examination of the consequences on a second variable. Random allocation to treatment and control from a group sharing the same characteristics, is often presumed to establish the logic for concluding that the effect is caused by the manipulation. A vital question in such a design has to do with the nature of the variable manipulated. In particular, is the amount of change in the manipulated variable measured in such a way that the findings are interpretable? In other words, in a physical experiment, when heat or other factors are introduced in order to cause an effect, the amount is ordinarily known and measured and the prediction of what happens is based on a quantitative notion of input. In much of the social and psychological experimentation that has been carried out to date, experimental manipulation involves inputs of unknown quantities. If one does not know how much input has been involved, the results of the experiment merely demonstrate that if a variable is manipulated with sufficient intensity it can cause an effect. Indeed, it really suggests that the researcher must demonstrate that the findings are more than trivial. Even if one gets a difference that is statistically significant, one must still assess whether it is important.

Further, a problem associated with the notion of experimentation where one variable is varied and the effect on a second variable is observed is that in a highly complex system of variables there may be many interactions among the variables. That is, the relationship between the two variables involved may be affected by how they are observed within the more complex system of variables. So, for example, if one examines the effect of

particular instructional materials as contrasted to a control set of usual materials, it may be that in the particular situation in which the materials are tried, they will simply be better measured because the performance criterion is tailor-made. On other criteria, the differences might not be sustained. This type of criticism involved in the analysis of experimental procedures is important in making generalizations from experimentation. That is, even assuming that the first criticism above has been answered and the amount of input is measured, then the next question is whether or not a narrow experimental procedure can demonstrate a general relationship between two variables. In a system that involves many variables, such as in continuing nursing education, examining the impact of one on the other with the remainder of the variables held constant may be an insufficient demonstration of the "true" relationship between the variables.

In short, the evaluation of effects of the continuing education curriculum on the beginning nurse practitioners may not be a suitable subject for a true experimental design. However, the researcher believes that even though he lacks full control over the scheduling of experimental stimuli and other variables which make a true experiment possible, the natural educational settings in which the research is conducted allows him to introduce a quasi-experimental design.

2. Design of the Experiment

The design chosen for the evaluation of this continuing education curriculum is one considered by Campbell and Stanley (1966), and others (Pilliner, 1973; Burroughs, 1975) as one of the best available for that educational research which takes place, not in the controlled, artificial setting of the laboratory, but in the real world of education. The latter type of educational research, as Pilliner states, is likely to convey more conviction and have maximum relevance to the needs of both educators and students, but it entails problems related to the control of extraneous variables, or interfering influences which can tend to obscure or compound the effects that are of particular interest. Such

influences Campbell and Stanley refer to as threats to the validity of the experiment; both the internal validity, in that the research results can be accepted as being a function of the experimental treatment, rather than of other uncontrolled variables; and the external validity, which affects the extent to which results can be generalised. Among the factors which these authors consider jeopardise internal validity are (1) history - events other than the experimental treatment occurring between a pre- and post-experiment measure, (2) maturation - processes within the subjects operating simply as a function of the passage of time, (3) testing - the effects of taking a test upon the scores of a subsequent testing, (4) instrumentation - changes in scores or scoring, (5) statistical regression - occurring where groups have been selected on the basis of extreme scores, (6) selection bias - and (7) experimental mortality - differential loss of respondents from the comparison groups.

External validity of results may be threatened by the possibility that the pretesting may alter subjects' responsiveness to the experimental situation, i.e. that the results may be those of groups warmed up by the pretest and therefore not generalisable to an unpretested population. There is also the problem of any interaction effects from selection bias and the experimental treatment, as well as the threat of the well-known "Hawthorne effect" (Roethlisberger and Dickson 1939), that is, the reactive effects of the experiment per se.

Bearing all of this in mind, the design decided upon for this quasi-experiment was the pretest/posttest control group design; but a version in which the control group and the experimental group do not have pre-experimental sampling equivalence. Rather the groups constitute a naturally assembled collective, that is, as beginning nurse practitioners. In terms of the quasi-experimental designs discussed by Campbell and Stanley (1966), the present design resembles Design 10. However, the above design was modified in this study in two ways. Firstly, a retention of learning observation or measurement was added. This was made at a period six months after the continuing

education programme. Secondly, a follow-up study was carried out.

The adapted design used in this research is shown in Figure 5.1. The two quasi-experimental groups employed were the quasi-experimental group who received the treatment and the control group who did not receive the special treatment.

Figure 5.1: The Design of the Experiment

Group	Pre-Experimental Stage	Experimental Stage	Post-Experimental Stage		Retention Stage
E	0_1	x	0_2	Intervening Nursing Experience	0_3
C	0_4		0_5		0_6

It is perhaps misleading to depict the comparison between the groups in the above design as between "x" or "no x". Campbell and Stanley point to the area-simplification of the position which is suggested in the diagrammatic representation. In the case of this continuing nursing education experiment, the control group beginning nurse practitioner may receive the conventional hospital based in-service programme. It was the experience of the specific career stage related curriculum which represented the "x", the absence of that experience which represented the "no x".

A crucial feature of the experimental design was the allocation of subjects to experimental and control groups randomly, which was preceded by matching the subjects on a variable considered relevant - in this case the level of first year registered nurse. Burroughs (1975) stated:

> "There is a single correct procedure for matching. Students are matched on each variables as are selected. Then each matched pair is taken and one of the students allocated at random to one group and the other student to the other group. The matching comes first and the grouping comes second rather than the other way round". (P. 64.)

This was exactly the procedure adopted in this experiment. The difficulty of controlling the variable of prior experience and knowledge was overcome by the administration of the pretest, that is, the specifically designed and validated test which measured that knowledge and yielded scores on which subjects were "paired" or matched.

The experimental design controlled for all the sources of internal validity although it was recognised that, by the addition of the third set of observations following the intervening nursing experience, the factor of history may have been less well controlled. However, to counteract this, testing of both groups was always carried out simultaneously. Most importantly, the long intervening period of varied experience, between the treatment and the observations at the end of six months, constituted a serious threat to the validity of the final stage of the experiment. Experimental mortality was also very slightly increased due to the passage of time.

The use of the pretest was considered justified and, indeed, very important in this experiment, simply because of the problem in continuing nursing education, of controlling the amount and type of nursing experience and teaching each nurse receives. The limitation to the generalisation posed by the pretest was mitigated by the fact that testing is a regular feature in nursing education, and also by the fact that no one of the students, at the time of pretesting, knew of the experiment which was to follow for some of them, therefore none was aware of the significance of the test.

2.1 The Independent Variable or "Treatment"

The independent variable was, in essence, an experimental curriculum specifically designed to meet the nurse's career stage as the beginning nurse practitioner. The

curriculum was 15 hours in length, designed as an introduction to continuing nursing education for first year registered nurses. As described later, the curriculum was organised and developed taking into consideration of the needs and interests of the first year registered nurses.

2.2 The Dependent Variables

The dependent variables were:

1) the awareness of the experimental group, about important issues in continuing nursing education,
2) the attitudes of the job satisfaction of the experimental group, as a result of their experience of the experiment.

2.3 Follow-up Study Strategies

Evaluation is a form of social research in which consideration of outcomes in terms of usefulness take on an importance equal to that of validity. The credibility, value, and worth of an evaluation study is enormously decreased if its usefulness cannot be demonstrated. Hence the need to conceptualise the notion of usefulness in a manner which will allow evaluators and planners to consider issues systematically in the process of developing evaluation plans. Morell (1979) suggested there are four general categories of evaluation usefulness, and the design of a study must be specifically tailored to the particular blend of uses which are intended in any given situation. Evaluation can serve to provide realistic expectations concerning what a programme can and cannot do; it can provide information to a programme's administrators and employees concerning ways to improve their services; it can aid policy makers in determining basic changes in programme structure of funding; and finally, it can be used as political ammunition to attack or defend a programme.

Although in most evaluations the outcome measures of usefulness are obtained after a specified amount of time in the programme, some outcome measures may not be readily

observed until a period of time subsequent to the subject's formal termination from the programme. Thus, in continuing education programmes, follow-up study becomes an essential part of obtaining outcome information as an indication of programme impact i.e. the importance of evaluation must be understood in terms of the advantages of extended time frame research.

In the present study, a follow-up schedule was therefore planned six months after the programme to observe its impact.

3. Design of the Curriculum

3.1 Selection of the Curricular Content

As this study aimed to generate a curriculum appropriate to "beginning nurse" career stage, selection of relevant curriculum material became an important development activity.

Choosing relevant curricular content for the beginning nurse practitioner has proved to be a difficulty task. Over a period of time, the researcher has been actively involved in the collection of curricular data. The data gathering devices used have included established contacts and discussion with nurse administrators and educators responsible for continuing nursing education, registered nurses and other health professionals in various health care settings. In addition, other sources of content data have been located by the researcher through participation in and observation of continuing education programmes and through analysis of programme evaluations, books, journals and articles.

During this content gathering process, the researcher has observed that a significant obstacle to selecting appropriate curricular content is the veritable universe of potential contents. The recency and, therefore, inadequate criteria of the continuing education movement along with the intangible nature of many of its goals, further contribute to the difficulty. In addition, lack of consensus among nursing professionals as to what are the

characteristics of the beginning nurse practitioner (and hence suitably representative curricular contents) pose a major problem in drawing a sample from available material.

In an attempt to remove the researcher's personal bias and subjectivity in the sampling of content and to establish reliable and valid data, several devices were used. The basic strategy for selecting relevant curricular content for the beginning practitioner was designed in three stages involving careful analysis and classification of data, expert assessments of that data and validation through a pilot sample of first year registered nurses.

3.2 Generation of Content Data

A considerable mass of data was collected. It was necessary to proceed through several stages to select the precise content for a beginning nurse pratitioner programme.

The first stage was intended to eliminate any repetition and to group together related issues. This first simplification is shown in Table 5.1.

The second stage aimed to achieve conceputal simplification by examining the issues in Table 5.1 for logical relationships. On the basis of these relationships, a small number of (n=5) activities or areas provided the basic framework. Each area represented a way of coalescing a range of issues into a more general summary statement of the curricular activity. These five areas were considered to provide an organising structure for continuing nursing education and this structure is shown in Table 5.2.

Table 5.1: Grouping of Curricular Issues

(i) Develop and Improve competencies in:
Patient assessment
Care planning
Range of nursing techniques
Advanced nursing approaches
Knowledge for patient care
Ward management
Using resources effectively
Patient progress evaluation
Observation skills
Communicating and relating to patients
Awareness of new nursing methods

(ii) Access to:
Practical advice on patient problems
Supportive supervision from senior colleagues
Co-operation from peers for patient care

(iii) Obtain hospital response and recognition for:
new ideas
personal efforts
achievement
contribution to hospitals

(iv) Develop professional relationships with:
Peers/colleagues and other health professionals
Senior staff
Relatives and visitors

(v) Advice on:
Legal and ethical issues
Attaining full professional autonomy
Responsibilities and accountability
Coping with stress and tension

(vi) Gain full awareness of:
Conditions of services
Benefit entitlement
Grievance procedures
Career opportunities and pathways
Promotion requirement
Organisational structure
Job responsibilities
Professional organisations

(vii) Develop conceptions of:
Philosophy of nursing
Characteristics of nursing profession
Role of health care services
Personal value position as professional worker
Ambivalent commitment to nursing

(viii) Counselling/advice for:
Adjustment to new role
Adjustment to new clinical area, hospital, communities
Managing a home and work
Financial management

Table 5.2: The Organising Structure of Continuing Nursing Education

ISSUES	AREAS
(i) Develop and Improve competencies in: Patient assessment Care planning Range of nursing techniques Advanced nursing approaches Knowledge for patient care Ward management Using resources effectively Patient progress evaluation Observation skills Communicating and relating to patients Awareness of new nursing methods	A. Activities directed towards more effective nursing performance in clinical area.
(ii) Access to: Practical advice on patient problems Supportive supervision from senior colleagues Co-operation from peers for patient care	
(iii) Obtain hospital response and recognition for: new ideas personal efforts achievement contribution to hospitals	B) Activities derived from the hospital context of the nurse's job, but outside of direct clinical situation.
(iv) Develop professional relationships with: Peers/colleagues and other health professionals Senior staff Relatives and visitors	
(v) Advice on: Legal and ethical issues Attaining full professional autonomy Responsibilities and accountability Coping with stress and tension	
(vi) Gain full awareness of: Conditions of services Benefit entitlement Grievance procedures Career opportunities and pathways Promotion requirement Organisational structure Job responsibilities Professional organisations	C) Activities related to pursuing employment in a particular health care setting.
(vii) Develop conceptions of: Philosophy of nursing Characteristics of nursing profession Role of health care services Personal value position as professional worker Ambivalent commitment to nursing	D) Activities related to pursuing a role as a health care professional.
(viii) Counselling/advice for: Adjustment to new role Adjustment to new clinical area, hospital, communities Managing a home and work Financial management	E) Activities related to personal concerns, which could impinge on professional job performance.

The next step was to use these five areas as a conceptual framework and guide to re-analyse the issues of Table 5.1. This second order analysis attempted to determine specific topics that are relevant to the beginning nurse practitioner. From this analysis, a range of nine topics was developed from the five areas. Table 5.3 summarises these topics and also represents an expanded framework for continuing education for the beginning nurse practitioner.

Table 5.3: Curricular Topics Derived from Organising Structure

Areas	Topics
A) Activities related to direct nursing performance	1) Technical knowledge 2) Administrative technique
B) Activities related to hospital context, but outside direct clinical situation	3) Relationship with relatives, peers 4) Development of meaningful nursing experience
C) Activities related to pursuing employment in a particular health care setting	5) Professional/Career development 6) Condition of service
D) Activities related to nurse as a professional	7) Professional philosophy 8) Professional acitvities and obligations
E) Activities related to personal concerns	9) Personal goals and attributes

The final step in the gathering of content data was to convert these nine topics into an item version considered appropriate for the beginning nurse practitioner. This process eventually produced twenty-six specific content items as summarised in Table 5.4.

Table 5.4: Curricular Items for Beginning Nurse Practitioners

Topics	Items
1) Technical knowledge	1.1) Knowledge of nursing matter 1.2) Skills in nursing technique
2) Administrative technique	2.1) Ward management and organisation 2.2) Statutary requirement and hospital policies 2.3) Supervision and systematic evaluation 2.4) Nursing audits
3) Relationships with relatives and peers	3.1) Communication and interpersonal skills 3.2) Professional and social relationships 3.3) Groups and group dynamics
4) Development of meaningful nursing experience	4.1) Facilities and resources 4.2) Nurse as a specialist 4.3) Extended role of nurse 4.4) Innovations and changes
5) Professional/Career development	5.1) Career opportunities in New South Wales health care system 5.2) Nursing as a career 5.3) Personal career development programme 5.4) Recognition and achievement
6) Conditions of service	6.1) Public Hospital Awards, New South Wales 6.2) Job specification
7) Professional Philosophy	7.1) Nursing philosophy 7.2) Legal issues
8) Professional activities and obligations	8.1) Professional and Industrial organisations. Nurses interest groups 8.2) Professional rights, responsibilities and obligations
9) Personal goals and attributes	9.1) Adjustment to new role demand 9.2) Personal goals 9.3) Coping with social pressures

3.3 Expert Assessment of the Content

Six nurse educators and two nurse administrators who were experienced in continuing education were asked to select those content items relevant to the beginning nurse practitioner, taking into account that continuing education seeks to assist individuals:

(a) to gain knowledge, skills and attitude that will enable the nurses to perform their duties more effectively;

(b) to learn new nursing roles and techniques;

(c) to provide for self-development and professional growth;

(d) to demonstrate evidence of competence for practice;

(e) to gain a degree of self-understanding and understanding of opportunities for making sound career decisions;

(f) to be aware of means available to them for continuing education.

Out of the total of twenty-six content items, twenty four items were judged representative by at least seven judges. These items were then transcribed into a nurse inventory for further trial.

3.4 Continuing Nursing Preferences Inventory

Two assumptions underpin the construction of this inventory. The first is that preferences can be important indicators of relevance of curricular contents. The second is that particular nurse preferences for continuing education, if held in a positive direction, can motivate the nurse and be supportive of the goals of the continuing education programme. Therefore, to establish reliable and accurate findings, the twenty four content items agreed by judges were further tested by nurses after items had been transcribed into a preferences inventory (see Appendix B1).

Fifty newly graduated nurses from four hospitals were used as subjects for the trial. The procedure modified from Likert (1932) was adopted. Subjects were asked to respond on a five-point scale (strongly prefer, prefer, not sure, not prefer, strongly not prefer) to

each statement.

Where a statement reflected a positive preference to the content, the responses were scored 5, 4, 3, 2, 1 respectively. All responses are analysed to reveal:

(a) total score obtained by each subject;

(b) the mean, the standard deviation and the variance;

(c) the frequency distribution of the scores;

(d) the split-halves reliability of the scores;

(e) the Cronbach's alpha coefficient for each item;

(f) the biserial coefficient (validity index) of each item.

The results of the analysis are included in Appendices B2-B4 and are summarised in Tables 5.5, 5.6 and 5.7.

Table 5.5: Continuing Nursing Education Preferences Inventory: Frequency Distributions

Scores	Description of Topics	Frequencies
81 - 100	Highly Preferred	34
61 - 80	Preferred	16
41 - 60	Not Sure	0
21 - 40	Not Preferred	0
1 - 20	Highly Not Preferred	0

n = 50
mean x = 98.48
s.d. = 2.56

Table 5.6: Continuing Nursing Education Preferences Inventory: Means, Standard Deviations and Standard Errors

	Areas	Mean	S.D.	S.E.
1.	Activities Related to Direct Nursing Performance	25.86	2.59	0.37
2.	Activities Related to Hospital Context	23.9	2.99	0.42
3.	Activities Related to Pursuing Employment	20.1	3.03	0.43
4.	Activities Related to the Nurse as a Professional	15.5	2.18	0.3
5.	Activities Related to Personal Concerns	13.1	1.4	0.14

Table 5.7: Continuing Nursing Education Preferences Inventory: Validity Index (Biserial r)

Possible items for Continuing Nursing Education should include:		% Score in the top 27% subjects	% Score in the bottom 27% subjects	r bis (validity index)
1.	Further knowledge in nursing	98	75	0.49
2.	Advanced nursing technique	95	65	0.45
3.	Ward management and organisation	85	69	0.21
4.	Statutory requirements and hospital policies	95	75	0.36
5.	Supervision of junior staff	92	75	0.24
6.	Nursing audits	92	72	0.28
7.	Communication technique	94	75	0.35
8.	Interpersonal/Interprofessional skills	85	67	0.26
9.	Group dynamics	85	61	0.30
10.	Effective use of resources	89	70	0.29
11.	Extended role of nurses	89	64	0.36
12.	Specialisation in nursing	92	63	0.37
13.	Innovations and changes in nursing	97	78	0.47
14.	Career opportunities in New South Wales	94	69	0.41
15.	Personal career development programme	95	81	0.26
16.	Nurses Award in the New South Wales hospitals	89	75	0.22
17.	Job specification	95	72	0.37
18.	Nursing philosphy	94	72	0.38
19.	Legal aspect of nursing	88	67	0.29
20.	Professional and Industrial organisation	86	61	0.32
21.	Professional rights and obligations	95	83	0.23
22.	Adjustment to new role demand	94	70	0.40
23.	Setting personal goals	95	67	0.43
24.	Coping with social pressures	94	78	0.31

The biserial coefficient (r bis) (Flanagan, 1955; Garrett and Woodworth, 1972; Ferguson, 1976) provides a measure of item discriminative power (validity index) for each item, being dependent on the split percentage scores obtained on the statement between the top 27 percent of subjects on the whole inventory and the 27 percent receiving lowest scores. High biserial coefficients indicate that statements are highly valid and contributing effectively towards the inventory. The discriminative power (validity index) is obtained directly from the normalised biserial coefficients of correlation table (Flanagan, 1955). As a general rule, statements with validity indices of 0.2 or more are regarded as valid. A value of r bis = 0.2 was therefore accepted as the lower limit for inclusion in the Continuing Education Preferences Inventory. Items that failed to reach the lowest acceptable r bis - value of 0.2 were therefore deleted.

3.5 Reliability of the Continuing Nursing Education Preferences Inventory

The split-halves reliability of the 24 items Inventory was 0.69 which, after the Spearman-Brown correction was applied, converted to a measure of reliability for the whole test of 0.81. The Spearman-Brown Prophecy formula provides a way of estimating the reliability of a total test from a split-halves reliability coefficient when complete alternative forms of the test are not available.

$$R = \frac{2r}{1+r}$$

where R = correlation between two complete test forms

r = correlation between two half tests.

3.6 Validity of the Continuing Nursing Education Preferences Inventory

The fact that items had been carefully and systematically sampled, analysed and classified by the researcher suggested that the Inventory had face validity.

The Cronbach's alpha coefficient provided a measure of internal consistency. With the Continuing Nursing Education Preferences Inventory, the alpha values obtained for the five areas ranged from 0.68 to 0.79. This result supported that each area had acceptable internal consistency.

Of the original 26 items, seven judges out of eight displayed preferences for 24 items. This suggested that continuing education preference was a valid hypothetical construct for the curricular content and that, the final version of the inventory was likely to be a valid measure of the construct.

4. The Two Criterion Measures

Conventional criteria for evaluating curriculum emphasise the context, input, and process in which the curriculum is being operated. Although the value of such measures has no doubt been significant in general, it is important to develop new measures that meet specific issues. In this particular study, the issues arise not so much from the needs, conditions and problems within a defined and operating educational environment, but from what this curriculum is trying to accomplish. It is not the resource, budget and time requirements necessary for developing the curriculum, but how well it meets the evaluator's judgement.

The evaluation in this study is therefore essentially one of finding better ways of characterising what the continuing education curriculum does to the beginning nurse practitioner. Two measures are used for this judgement; the educational awareness index and the job satisfaction profile.

4.1 An Index of Continuing Nursing Educational Awareness

A point about rationale should be raised here. The graduates of the basic nursing programme are equipped to funtion as first level practitioners. It is expected, however,

that a significant proportion of the beginning nurse practitioners will elect to take further continuing education programmes that will prepare them for more specialised areas. However, before embarking upon continuing education activity, the beginning nurse practitioner must develop some awareness of its importance.

The term awareness has appeared frequently in psychological literature. Unfortunately, most of the writers use the term without providing the reader a clear definition. One notable exception is Rogers (1979) who states that awareness is the symbolic representation of part of an experience. Atkinson (1984) incorporates Rogers' concept of awareness into his writing and uses the term synonymously with consciousness. Beier (1982) concludes that reportability is the only operational definition of awareness.

Perhaps the concept of educational awareness is better described by Super (1977). In Super's terms, educational activity in adults reflects their self-concepts, thus educational awareness is seen as the directional component of that process of implementing choices. A person could choose any number of activities from a universe of interests; however, some people choose a particular educational programme. Their awareness has provided them with specificity. Individuals bring self, likes, dislikes and abilities to the educational exploration process.

Super believes that individual exploration of self and learning begins at home with the family, continuing through school and employment. Ginzberg (1982) restates this theory of educational choice and points to equally important experiences such as race, sex, neighbourhood influences and socioeconomic status factors. Ginzberg describes most of these experiential dimensions as constraints on educational choice.

Hence, in the present study, educational awareness is conceptualised as the extent to which nurses perceive their professional needs to link with continuing education. More specifically, educational awareness reflects two essential elements. These include, firstly,

a conscious recognition of educational experience as being professionally relevant and therefore important; and secondly, a behavioural response involving the selection of what is believed to be a positive educational activity.

4.1.1 Operationalising the Construct

The Continuing Educational Awareness Index was developed to measure the construct of educational awareness of the beginning nurse practitioners before and after curriculum implementation. The index focuses on five experiential dimensions: policy, aim, implementation, learning climate and individual responsibility, considered important in facilitating nurses' commitment to lifelong learning. The significance of these dimensions in continuing nursing education have been well discussed by Popiel (1977), Cooper (1978), Curran (1981) and Sovie (1981) and are elaborated further.

The first experiential dimension is policy. Continuing education is becoming a major force in nursing education. Regrettably, it is still so relatively new that its full scope is seldom recognised. As the continuing nursing education programmes grow and new ones develop, policies that identify the goals of the programmes become essential. No matter what health agency is conducting the course or what geographic area is involved, it is imperative that certain policy elements be incorporated into the programmes:

1. The institution offering the course must agree on the definition to be used for continuing education. All concerned must be operating from the same frame of reference.
2. The programme needs to be guided by people of competence who are skilled in designing and conducting continuing nursing education.
3. The programme must be fully accepted as an essential responsibility of the health agency. Administrative and nursing staff, as well as those assigned to the continuing education staff, must work together and accept the educational function as an important part of their work.

4. The programme must assist the nurse practitioner to realise her potential more fully, through providing educational opportunities in her special area of interest and desired competency.
5. The programme will offer means through which nurses can advance their knowledge of new therapies and nursing developments.
6. The programme will offer opportunities by which professional nurses might develop their potential skills so that they may play an increasingly active and satisfying role in the community.

The second experiential dimension is aim. Commitment to lifelong learning appears to be a relatively new concept. In the not too distant past, nursing students were taught alongside the tacit, if not stated, assumption that they were being provided everything they would need to know for their professional practice. Even today it is not unusual to hear nurses speak in terms of "... Now, when I was a student, I learned ...". The implication is that knowledge acquisition stopped at that point. Unfortunately for the profession, with some practitioners, this is the case. Yet what might have been adequate preparation for the practice of nursing a few years ago is not sufficient for today's needs. Rapid technological advances, with concomitant changes in medical practice, have altered current nursing practice. The beginning nursing practitioner therefore needs to recognise that graduation from a school of nursing marks only the beginning of a lifelong learning process for the effective nurse practitioner. Continuing education that fosters a spirit of lifelong learning is essential to quality performance in nursing.

The third experiential dimension is implementation. To convert the policies and the aim of continuing education into a successful educational activity, it is necessary to implement a process that will provide learning experiences and an environment that facilitates learning and draws in the nurses as active contributors. There must be concern for the development of individuals, a sense of the worth of every person and faith that nurses will make the best decisions for themselves if they have the necessary information and

support. Implementation must result in the realisation of nurses' potential. The personnel involved in continuing education must believe in the concepts of andragogy (as differentiated from pedagogy).

The fourth experiential dimension is learning climate. A substantial amount of learning is going on in today's hospitals. Many disciplines, such as nursing and medicine, rely upon the hospital setting to support the education of their future practitioners. Traditionally, this institution has served as the practice setting and the student's laboratory. Hence, the learning climate must be supportive if professional nurses are to develop this concept of learning as lifelong activity. Health institutions can create a desirable climate through administrative support of continuing learning and by making opportunities available to nursing staff to keep up with changing practice.

Of even greater significance in developing this concept of learning climate is the role of the senior staff. Nursing administrators must serve as role models in developing and maintaining a working environment that is conducive to continual learning. They must assume responsibility for their own continuous self-improvement and must integrate the concept of continuing education into various aspects of nursing practice. They must be interested not only in systematic, planned educational programmes, but in learning from colleagues and other personnel both at administrative and clinical levels. Belief in the concept of continuing education must be reflected by clinical practice that allows staff to use problem solving approaches to patient care to test their ideas or to seek further knowledge and skills. Beginning nurse practitioners will then accept continuous learning as a natural part of their professional responsibility.

All of this is to say that nurses must have the freedom to test and apply significant new knowlege in their work situations. Their wholehearted commitment to continuing learning can be achieved only if the nurses are given freedom to make their own decisions about participating in a course; can determine their own objectives for learning; and can

implement changes in work situation based on application of new knowledge and skills.

A note should also be made in regard to the fifth dimension; individual responsibility. The nurse with an inquisitive mind, who asks questions as she cares for patients, who seeks information from many sources, is one who will continue to learn through her own efforts. Every nursing situation contains opportunities for learning if the nurse is prepared to take advantage of them.

If nurses are overwhelmed with the duties confronting them, they may appear to be oblivious to the many opportunities for learning opened to them. The nurse with a lack of imagination or poor observational skills and a lack of desire to learn will see any job as routine and dull. The perceptive nurse, on the other hand, will find something of value to her professional growth under a great variety of circumstances. Individual growth depends upon the way the nurse has learned to use her mind and take responsibility continuing learning. The committed learner has a strong need for testing knowledge and ideas. Raising questions, exploring ideas and sharing experiences can all be conductive to learning. Both individual and group approaches to keeping current will be sought; through systematic study of nursing publications, informal discussion with other nurses, participation in formal meetings, writing in nursing publications and by contributing to nursing care conferences. Furthermore, this kind of nurse recognises that reading outside nursing can enhance her ability as a practitioner, because this contributes to her understanding of the community outside the hospital. She is aware that participation in professional and community organisations contributes to her personal development. She also recognises her limitations and is selective about participation in the various avenues to learning that open to her.

All of these dimensions are reflected in the respective five scales of the Continuing Educational Awareness Index. Scale items representing a particular aspect of a dimension were devised from nurse administrator and educator interviews conducted for the purpose

at the time of collecting data for curriculum content.

Thirty-six first year registered nurses in four hospitals were used as pilot subjects. The procedure devised by Likert (1932) was adopted. Subjects were asked to respond to the items' contents on five-point scales (strongly agree, agree, not sure, disagree, strongly disagree) and the responses were scored 5, 4, 3, 2, 1 for the respective five points. Items of the Awareness Index appeared in random order without reference to scale designation (see Appendix C1).

4.1.2 Reliability and Validity

The question of how good the Awareness Index is for measuring the accomplishment of the curriculum requires attention to several aspects of measurement. The first aspect cannot be answered in any statistical sense, but requires reference to the whole scientific context in which the measurement takes place. This is the question of how valid a measure is. This may be phrased more directly by asking: Does the index that has been devised actually measure what it is supposed to measure? There are several concepts of validity to consider in the course of answering this question. However, before attacking the question of validity, the second aspect, reliability, will be examined.

Reliability usually is thought of as a measure of consistency, over time and internally or, in a commonsense way, the ability to provide the same results in different applications. There are several ways of assessing reliability and these will be considered briefly.

A commonsense approach to the idea of reliability is to use an index on two or more occasions with the same subjects and then examine how well the sets of scores correlate. If the correlation is high, the measure is judged reliable and, if low, relatively unreliable.

If a measure has a given level of reliability or unreliability, it is important to ask what the sources of unreliability are. Test-retest reliability, for example, provides one such

assessment about these sources. Is the unreliability due to the fact that the test is not consistent or stable, or can something have changed, perhaps even the subjects themselves, between tests? One way of eliminating the confusion in a test-retest situation resulting from subjects changing over time is to develop a split-halves measure of reliability, such as comparing the odd with the even numbered items.

Perhaps a more adequate concept of reliability would be the intercorrelation between tests that are defined to be exactly equivalent. But how would one use this concept when it is already a difficult task to find a set of items that will form a reasonable basis for constructing an index?

Another psychometric concern at least as important as reliability is validity. Whereas reliability may be viewed as a measure of the relationship of an index to itself, validity may correspondingly be viewed as the relationship of a measure to things other than itself. An index is designed to represent some construct or hypothetical formulation of some attitude, ability, trait, and so on. The central concern of validity is how accurately an index operationalises the construct it is intended to represent.

There are three forms of validity: content validity, criterion-related validity and construct validity. If the measure is intended to determine how an individual reacts at present in a universe of situations that the instrument is meant to represent, content validity is needed. If the measure is to be used to predict or estimate the score on a different measure, criterion-related validity is needed. If a measure of the degree or amount of some hypothetical attitude, trait, or quality of a person is derived, construct validity is needed.

The content validity of an index is demonstrated by evidence that the sample of questions used is representative of the class or universe of tasks, conditions or processes about which conclusions are to be drawn. Conclusions about content validity are based on logic. Evidence is of three kinds. Using the subjective judgements of experts as to the

appropriateness of questions, one may obtain a measure of inter-judge agreement as an estimate of content validity. The procedure is greatly enhanced if the developer of the instrument has specified in advance the domain of attitudes and behaviour that is of interest, as well as the methods by which the corresponding questions have been selected or written.

A second form of evidence is high internal consistency reliability, or homogeneity of the questions. Questions in such a valid index correlate highly with one another, indicating in toto that they all reflect the same attitudinal behavioural domain.

A third form of evidence for content validity is the analysis of an index's factor composition. Like internal consistency, factor analysis is based on correlations among questions.

Criterion-related validity is important when prediction or estimation is the intended use of the index. Criterion validity includes functional relationships between an instrument and some independent criterion occurring before (postdictive validity), during (concurrent validity), or after (predictive validity) the instrument is applied. The association between the variable of interest and some other variable is based on the theoretical formulation of the construct.

Construct validity is a concern when one's interest is to increase understanding of the psychological qualities being measured. The process involves specifying the domain of observables, the extent of correlation among the observables and whether an index or indices consisting of such observables act as though they measure the intended construct.

In regard to the Awareness Index, Cronbach's Alpha Coefficient was used to determine the internal consistency of each of the five scales. The coefficients ranged from 0.78 to 0.91 (as summarised in Table 5.8) and constitute moderate to high consistency for the

five scales. The split-halves reliability of the scale of forty items was 0.56. Applying The Spearman-Brown correction, the reliability of the total scale is 0.71 (see Appendix C2).

Table 5.8: Cronbach's Alpha Coefficient of the Continuing Nursing Education Awareness Index

Continuing Nursing Education Awareness Index Scales	$\gamma\alpha$
Policy	0.78
Aim	0.84
Implementation	0.91
Learning Climate	0.81
Individual Responsibility	0.84

In any pure sense of the term, the validity of the Awareness Index must ultimately be judged on its power to predict nurses' commitment to lifelong learning. In the present context, no more is claimed for the Awareness Index than that it should provide a measure of accomplishment of the curriculum developed. The major issue of the predictive validity of the Index is therefore sidestepped because, by definition, no opportunity yet exists for this issue to be tested. However, the Awareness Index items have been judged by one nurse administrator and three nurse educators who have extensive experience in continuing nursing education. They unanimously agree on all items in each scale except the policy scale, where there is 90 percent agreement. The fact that so many of the items are agreed on by the judges seemed to demonstrate that the

sample of the items contained in the Index is representative of the universe of tasks in continuing education. The Biserial r (validity index) further indicates all the items have a value above 0.2 (Table 5.9). Hence the Awareness Index appears to display content validity.

Table 5.9: Continuing Nursing Education Preferences Inventory: Validity Index (Biserial r)

Items	% Score in the top 27% subjects	% Score in the bottom 27% subjects	r bis (validity index)
1. Nursing should direct more resources to continuing education	76	56	0.25
2. Continuing nursing education experiences are designed to enhance nursing practice	76	50	0.28
3. Nurses who are effective practitioners continue to learn on the job, but too often this is incidental, rather than planned	66	46	0.21
4. The future of continuing educational programmes must be seen as purposeful, meaningful experiences for nurses	82	64	0.23
5. In nursing, there should be a commitment to life-long learning	72	34	0.39
6. The rapid changes in the delivery of health care have made continuing education essential for every practising nurse	72	48	0.23
7. Continuing education should answer the need of the organisation as well as personal and professional development of the nurse	74	56	0.2
8. It is important to have a process of identifying and communicating continuing education needs of nurses	78	54	0.27
9. Nurses should be allowed to implement changes in the work situation based on new knowledge gained from continuing education	84	58	0.32
10. Graduation from the basic nursing programme marks only the beginning of a lifelong learning process	78	54	0.27
11. Continuing nursing education should be mandatory	60	32	0.27
12. Continuing education is essential to quality performance in nursing	76	44	0.32
13. There should be evaluation for nurses who participate in continuing education programmes	70	48	0.23
14. Continuing education for nurses should focus on their professional needs and personal concerns	74	50	0.26

Items	% Score in the top 27% subjects	% Score in the bottom 27% subjects	r bis (validity index)
15. Nurses should take the initiative in planning for their own continued learning	70	50	0.21
16. There should be practical encouragement from the employer for continuing education	78	60	0.2
17. The purpose of continuing education for nurses is to enable them to perform their job better	76	56	0.21
18. Continuing nursing education programmes should be well publicised	76	58	0.21
19. The nurse as an adult learner has unique educational needs	74	56	0.21
20. Nurses must share the responsibility with educators in recognising the value of continuing education	70	46	0.25
21. It is important to have a formal organisation-based policy related to scheduling of continuing education	74	52	0.24
22. Existing continuing nursing education assists nurses very much in learning roles and techniques	78	60	0.2
23. Existing continuing nursing education already includes a wide enough spectrum of educational activities	66	44	0.23
24. The nurse is motivated to come into continuing education as a result of experiencing problems in life generally	54	32	0.23
25. The nurse should determine his/her own objectives for learning in continuing education	62	42	0.2
26. The nurse should have a developmental profile which indicates their educational need	62	40	0.23
27. Continuing education aids self-development and professional growth	72	54	0.21
28. There should be established standards for continuing education in nursing	64	48	0.2
29. Learning climate must be supportive for the nurse to develop a concept of learning as a life-long activity	74	54	0.22
30. Nurses need to show more concern about the value of their learning activities	70	50	0.21
31. Continuing education should be available to all nursing personnel	78	56	0.25

Items	% Score in the top 27% subjects	% Score in the bottom 27% subjects	r bis (validity index)
32. Continuing education aims to promote individual responsibility and accountability of nurses for their life-long learning	70	50	0.21
33. In developing meaningful learning experiences, the curriculum developer must consider those concerns that tend to be the focal point at various career stages	78	60	0.2
34. Nursing administration must serve as a role-model in developing a working environment that is conducive to continue learning	70	44	0.27
35. Nurses have the responsibility to make personal educational needs known to the organisation	70	44	0.27
36. Achievement in continuing education should be recognised by the organisation for advancement purposes	74	54	0.22
37. Continuing education facilitates the integration of nursing science and nursing practice	74	52	0.24
38. There should be quality assurance criteria for continuing nursing curriculum	76	58	0.21
39. Nurses must be free to make their decision about participating in continuing education	72	56	0.2
40. Nurses should share knowledge gained from continuing education with peers	76	46	0.32

4.2 Job Satisfaction Profile

4.2.1 Rationale

Two overall goals are evident in research on and discussion of professional education. Perhaps simply stated, those two goals appear to be (1) a societal outcome - providing a competent labour force that meets the needs of the service and economy and, (2) an individual outcome - providing individuals with skills and knowledge that lead to satisfactory employment. Evaluation being a matter of accountability, the relative importance of societal and individual outcomes determines "to whom" and "for what"

continuing education will be accountable.

Continuing nursing education must, of course, be accountable to society for providing a skilled nursing force. According to this criterion, questions of programme evaluation are expressed in the language of economics and manpower policy making. It is no coincidence that successful application of the techniques of cost-benefit analysis to programme accountability has been growing.

It is also no coincidence that there are growing criticisms of the use of economic analysis from those who urge the recognition of noneconomic factors in evaluation and planning of programmes. Somers and Wood (1979) comment thus on the developments and applications of economic analysis:

> "The arguments of the critics ... assume special force when applied to educational policies. They feel that evaluation of programmes to aid the disadvantaged in terms of society's monetary benefits and costs alone is inappropriate; non-monetary considerations should also be taken into account. Although it is generally recognised that nonpecuniary factors affected social welfare, such factors are seldom incorporated into cost-benefit models. The critics feel that cost-benefit analysis concentrates on the quantitative to the exclusion of the qualitative, thereby sacrificing worthy programmes on a cross of gold". (p. vii)

The Somers and Wood view is echoed in the present study. The researcher believes that goals in continuing nursing education must be determined by non-economic as well as economic factors. Pre-eminent among non-economic factors are social-psychological dimensions such as job satisfaction. The use of job satisfaction in programme evaluation and the level of sophistication of measures of job satisfaction are, therefore, a function of the relative importance of economic and non-economic goals, of societal and individual outcomes.

Perhaps a major support to the researcher's view comes from the growth of consumer advocacy and the concern for the "quality of working life". These are just two of the many indicators that in recent years have shifted the focus of accountability in the

direction of individual outcomes.

According to this emphasis, programme evaluation should include measures of how well education satisfies employability, job competency and other work-related needs of the individuals. The assessment should therefore incorporate social-psychological dimensions of job attitudes.

As Young, Clive and Miles (1981) point out, job satisfaction can be a potentially useful criterion for the priority determination phase of continuing education programme planning. Measures of the degree of job satisfaction of the participants of various curricula would add a useful dimension to programme appraisal. These authors note, however, that while many follow-up studies and reviews recognise the importance of job satisfaction, the significance and interpretation of the results has been questioned. Their observation seems to concur with Little's (1980) comment on the "fragmentary and sporadic" nature of the information presently availabe on job satisfaction within the context of education.

4.2.2 Defining Job Satisfaction

Although several widely accepted theories of job satisfaction exist, few, if any, can justifiably claim to be well-developed, powerful theories of job satisfaction. Various formulations of job satisfaction have definitions that allow measurement constructs to be developed, but a precise theoretical framework of causal relationships has yet to be formulated. As a consequence, we know a great deal about variables that correlate with job satisfaction, but little about the exact antecedent or consequent nature of their relationships with job satisfaction.

Many current formulations of job satisfaction draw upon Maslow's (1954) theory of need fulfilment which assumes some structure of human needs and the degree of fulfilment that some jobs afford. According to Maslow, five need categories (from physiological, up

through safety, belonging, and love, esteem, and self-actualisation) exist in a hierarchy of prepotency. The strength or importance of a need depends on its position in the hierarchy and the degree of satisfaction of all lower needs. In this approach, job satisfaction is seen as a function of the degree to which facets of the work environment fulful the needs at the worker's level of prepotency within the hierarchy. Various conceptualisations of the process of assessing fulfilment produce different theoretical formulations of job satisfaction.

What has been called discrepancy theory maintains that satisfaction is determined by the differences between the actual rewards a person receives and some other reward level, with various theorists making distinctions of what "some other reward level" should be. Locke's (1976) discrepancy formulation, for example, emphasised perceived (not actual) discrepancy between what one wants from the job and what one perceives it as offering. Others, such as Porter (1968) and Lawler (1973), consider discrepancy as individual's assessment of how much of a given reward there should be and how much is actually received. An indication of overall job satisfaction would, accordingly, be given by the addition of the discrepancies for each aspect, or facet of a job.

Equity theorists like Adams (1963) argue that satisfaction is determined by a person's perceived input - outcome balance; a ratio of what he or she receives from the job relative to what he or she puts into it. Equity or inequity is evaluated by comparison to relevant others. Equity is said to lead to satisfaction; inequity of over-reward or under-reward leads to dissatisfaction in the form of guilt or feelings of unfair treatment, respectively

A theory that has received considerable attention because of its unique conceptualisation of job satisfaction is called two-factor theory in the literature and motivation-hygiene theory by its author (Herzberg, 1968).

This theory differs from previously mentioned concepts of job satisfaction in that satisfaction and dissatisfaction are said to operate as separate outcomes and factors that contribute to satisfaction are distinct from those that reduce dissatisfaction. The fulfilment of two sets of human needs, psychological growth and pain avoidance, is brought about by the provision of motivation and hygiene factors respectively. According to Herzberg, satisfaction in work will result to the extent that the factors of achievement, recognition for achievement, advancement, possibility for growth, interesting, challenging work and responsibility are present. The absence of certain other factors will result in dissatisfaction; these are supervision, relationships with co-workers, company policy and administration, status, good working conditions and security. Herzberg's definition of job satisfaction, then, does not allow for a construct of what is traditionally called "overall job satisfaction". Measures based on Herzberg's construct therefore focus on the reactions to the work itself as the most powerful motivating (satisfying) factor.

4.2.3 Construction of the Job Satisfaction Profile

Perhaps half of the justification of a continuing education curriculum lies in improving the worker's job satisfaction. However, job satisfaction, or the recognition of need fulfilment, is optimised when that recognition is accompanied by strong affective responses. In this study, therefore, a job satisfaction profile based on affective response to need fulfilment, was a high priority.

Job satisfaction is better regarded as an attitude arising from two concurrent evaluative activities in which the individual assesses his job and work environment in terms of both the realisation of his basic values and associated concrete life goals. Job satisfaction is thus a dynamic process, although at any given time of measurement it can be treated as a static attitudinal state.

Locke (1976), in an extensive treatment of job satisfaction, provides a similar idea. According to Locke, job satisfaction results from the appraisal of one's job as attaining

one's important job values, providing these values are congruent with or help to fulfil one's basic needs. These needs are of two separate but interdependent types: bodily or physical needs and psychological needs, especially the needs of growth. Growth is made possible mainly by the nature of work itself.

In some previous studies, the measures of job satisfaction were intended to be applicable and generalised to other occupations. In others, some of which are presented in full by Robinson and Head (1979), these measures are tailored to specific occupations. The question arises, therefore, about choice of an occupationally specific or a generalised measure. There are, for example, measures specifically designed to assess the satisfaction of primary and secondary school teachers, scientists, managers and blue-collar workers. It has been argued that such occupationally specific measures provide more useful information for active programmes of job modification than do generalised measures, because the details of the specific occupations are more extensively assessed. Whether reliability and validity are superior in occupationally specific measures or in the omnibus measures is not known.

In developing a measure of job satisfaction, the Herzberg (1968) motivation - hygiene theory provides a useful base from which to work. Only the motivation factors of the Herzberg theory are focused on in this study. This is because that is the element where the researcher wanted to achieve a result. The hygiene factors might be dealt with better through organizational consultancy than through a continuing education programme for the nurses themselves.

A large number of opinion statements were written, or obtained with occasional modification from existing literature (Argyle, 1977; Handy, 1976; Godfrey, 1978; West, 1983). The statements were specifically tailored to the nursing profession and reflected the job value of the nursing profession. From the completed list, twelve items per scale were selected, giving a total of sixty items.

Two psychologists and two nurse administrators were asked to select from these sixty items, those which were relevant to the five job satisfaction scales. Fifty items judged unanimously by all judges were included for further trial with the final version of tem items per scale (see Appendix D1).

To avoid possible problems of comprehension, the measure was evaluated by five nurses in terms of its general language complexity and its use of specific jargon and terminology. The completion of a job satisfaction measure, like any attitude assessment, represents a particular kind of task for the respondent. Revealing information about oneself is often accompanied by apprehension if not suspicion, particularly when personal attitudes are sought. The respondent therefore needs the reassurance of knowing how and for what purposes the information will be used. This was provided in the covering letter explaining the purpose of the questionnaire and assuring confidentiality of the respondents.

4.2.4 Scoring of the Job Satisfaction Profile

The procedure devised by Likert (1932) was adopted. Thirty-six first year registered nurses in four hospitals were used as subjects. They were asked to respond to each statement by indicating their level of agreement or disagreement on a five point scale, (strongly agree, agree, not sure, disagree, strongly disagree). The responses were scored 5, 4, 3, 2, 1 for the respective five points.

Responses from individuals were analysed in relation to each of the five scales to provide:

a. total scores obtained by each subject;

b. the mean, standard deviation and split-halves reliability of the scores;

c. the frequency distribution of scores;

d. Cronbach's alpha coefficient for internal consistency of the Profile.

4.2.5 Reliability and Validity of the Profile

The split-halves reliability of the Profile of 50 items was 0.54. Applying the Spearman-Brown correction, the reliability of the total profile was 0.7. These data together suggested that the Job Satisfaction Profile had a satisfactory reliability.

The Profile's content validity was assured on two grounds. Firstly, the five aspects of Herzberg's theory (achievement, recognition, advancement and growth, challenging work and responsibility) used in the profile had resulted from extensive factor analysis of a large number of items. Secondly, all four judges in the present study unanimously agreed on the appropriateness of the fifty items. As the Alpha coefficients for the five scales were found to range from 0.79 to 0.85 (see Table 5.10), the profile can be said to have adequate internation reliability. The biserial r (validity index) further reveals all items have a value of above 0.2 (Table 5.11).

Table 5.10: Cronbach Alpha Coefficients for the Job Satisfaction Profile

Scale	Alpha Coefficient
Achievement	0.79
Recognition	0.79
Advancement and Growth	0.77
Challenging Work	0.81
Responsibility	0.85

Table 5.11: Job Satisfaction Profile: Validity Index (Biserial r)

Items		% Score in the top 27% subjects	% Score in the bottom 27% subjects	Validity Index (r bis)
1.	My quality of patient care is improving	66	46	0.21
2.	My input at work is well-considered	62	36	0.26
3.	Because of the skill I possessed, I have the opportunity to work in a desired speciality	52	34	0.2
4.	My work has been interesting	82	62	0.25
5.	I know how to delegate responsibilities to those able to assume them	60	42	0.2
6.	I am able to set goals to improve my performance	70	46	0.25
7.	My colleagues have high regards for me	66	46	0.21
8.	I am able to utililise the oportunity for professional growth	74	54	0.22
9.	I am able to set realistic and achievable goals	78	58	0.23
10.	I am able to exercise an independent nursing role	68	50	0.2
11.	I have high self-esteem	72	48	0.24
12.	My skill is acknowledged in nursing activity	62	38	0.25
13.	I am able to provide input in nursing decisions	70	50	0.21
14.	I can cope with the demand	68	40	0.3
15.	I have been responsible for difficult decisions	54	26	0.3
16.	I am able to use my initiative	78	56	0.25
17.	I am respected by other staff	60	42	0.2
18.	I can determine priorities of nursing activities based on management principle	64	46	0.2
19.	I have an interesting job to talk about	78	52	0.28
20.	My level of responsibility has been increased	72	48	0.29
21.	I am doing a worthwhile job	74	52	0.23
22.	I feel my work is very important	72	52	0.23
23.	I have been participating in the development of nursing ojbectives	66	46	0.21

Items	% Score in the top 27% subjects	% Score in the bottom 27% subjects	r bis (validity index)
24. I have the opportunity to evaluate the work I and others have done	62	42	0.2
25. I am able to fulfil my responsibility effectively	64	44	0.21
26. I feel especially good when it turns out after a period of time that my idea is working	78	60	0.2
27. I really feel that I am an important part of the team	70	46	0.25
28. I am able to deal with frustration and anger	64	44	0.21
29. I feel fresh and eager, ready to come to work	66	46	0.21
30. I believe my own work has been responsible for some patients' improvements	70	50	0.21
31. I have a good idea and solution to the problem	68	50	0.2
32. I have received recognition for my performance	68	46	0.25
33. My promotion prospect is good	62	42	0.2
34. I enjoy my work with much enthusiasm	70	42	0.29
35. The responsibility is great, and I have proved my ability to handle it	78	54	0.27
36. I get a tremendous feeling of satisfaction from seeing the improvement of nursing activity arising out of my idea	78	52	0.29
37. My supervisor has confidence in me	70	50	0.21
38. There is a future in my nursing field	76	52	0.26
39. I am able to be creative with my work	66	48	0.2
40. I have a responsible position	64	46	0.2
41. I am able to demonstrate the rightness to those who doubt me	60	42	0.2
42. My work is often praised	58	38	0.2
43. My opportunity to apply other nursing positions has been improved	62	42	0.2
44. I have the opportunity to provide a total patient care	66	44	0.23
45. I am able to work without supervision	64	42	0.24
46. I can see the accomplishment of my work	68	46	0.24
47. My idea is often accepted by my peers	64	42	0.24

Items	% Score in the top 27% subjects	% Score in the bottom 27% subjects	r bis (validity index)
48. There is objective evidence for my growth in skills	70	50	0.21
49. I am a professional worker with autonomy	66	46	0.21
50. I have been able to cope with new responsibility	66	46	0.21

5. Implementation of the Curriculum

In the preceding section, research design and outcome measures were examined. The present section investigates the process employed for the implementation of the curriculum for the beginning nurse practitioners.

5.1 Selection of the Sample

The population, from which the sample was drawn, was the third year nursing students currently undertaking the Diploma of Applied Science (Nursing). These students were chosen because they were in their final year of study and would be graduating and functioning as beginning nurse practitioners within three months of the commencement of the study.

A total of 74 students was involved, representing 5% of the total number of potential nurse graduates in 1988. Only those students who were encountering the experimental curriculum for the first time were eligible for inclusion in the control and experimental groups. A few students, who were either previously trained, or had studied materials relevant to the subject matter of the experiment, were not included in the sample.

5.2 The Educator

Over a period of time, the researcher has been an advocate for continuing nursing education. Such keenness may create an element of personal bias when implementing the curriculum. In order to reduce any potential for personal bias, it was originally planned that the curriculum would be taught by a team of independent experienced nurse educators with the researcher acting as the coordinator.

Nurse educators who were teaching continuing education in four hospitals were approached to ascertain their interest in participating in the study. Unfortunately the participation was not forthcoming. Some gave the reason that they did not have the time and some indicated that they did not wish to commit themselves in programmes organised outside their employing hospitals. One nurse educator expressed interest to be involved. However, when the experiment was to be started, she was away on maternity leave.

In the event, the researcher had to serve as the educator in teaching the experimental curriculum.

The researcher's strong interest in continuing nursing education is known in the profession. Over a period of years, he had been involved in organising and teaching continuing education interstate and overseas. His past employment records can verify that he is highly trained in this educational field.

Being aware that the researcher was responsible for teaching the curriculum, rather than some other independent person, an extra technique was employed to remove the researcher's potential for bias. During the course of the experiment, it was decided that the researcher's teaching colleagues could be present in the room and observe while the topics were being taught.

It is important to note that the students of the sample do not comprise a strictly random sample of all students enrolled in the final year of college nursing programmes in New South Wales. It was not possible for the researcher to alter the placements that the Universities and Colleges Admissions Centre (UCAC) made when allocating the students to the college nursing programme. However, randomisation at other stages in the sample selection, such as the random assignment of curriculum to the sample, can be seen to minimise any bias arising from student placement in the nursing programmes.

It is also important to note that the selection of the students was therefore governed by their accessibility to the researcher, within three months prior to their gradution and at a time which was suitable to the researcher's timetable.

5.3 Assignment of the Sample to the Experimental Curriculum

The participants in the final sample of 74 were allocated randomly to experimental and control groups by an independent judge. There were 37 students in each group. As small group teaching was planned as the main teaching strategy, the experimental group was further divided into four sub-groups with nine students in three sub-groups and ten students in one sub-group respectively. As the curriculum was taught by the same educator in all these groups, the different types and levels of teaching skills that might affect the outcomes of the experiment, should several educators be involved, were therefore minimised.

5.4 The Meeting

On several occasions before the experiment began, the researcher met the whole class of students who were to take part in the research. At the first meeting, the researcher introduced himself with a brief description of his background in nursing and of his current research into continuing nursing education.

The students were requested to fill in the pre-experimental continuing education awareness index and the job-satisfaction profile. Forty minutes were available, which was used to the full by most of the student respondents. The researcher explained that the questionnaires sought their opinions about continuing nursing education and job satisfaction, that there were no right or wrong answers, but it was important to the researcher, and to the profession, to know what the students thought. Instructions were given that they should try to answer every question and that they should try to choose the response which came closest to their opinion. Although their names were asked for at the head of the questionnaire, these were transposed into code numbers for follow-up purposes. At no time would any individual student be identified. All replies would remain confidential, a matter for which the researcher would be responsible. It was further explained that participation was not obligatory. However, far from reluctance, their response was unanimously one of interest and willingness to complete the questionnaires.

The next meeting in which the whole class met together with the researcher before the experiment took place was the occasion when the experiment was fully explained. The fact that there would be two groups was discussed and explained, although the details of how the allocation had been done was not divulged until the post-experiment meeting with the students. As carefully as possible, the researcher made it clear to the students that they could decide to opt out of direct participation in the research if they so wished.

5.5 Procedures during Implementation of the Curriculum

5.5.1 The Course Process

An important part in any curriculum implementation is the time-tabling of educational activities. The five conceptual frameworks developed previously were used as the base in the sequential organisation of the timetable.

As the experimental curriculum is outside the students' pre-service programme, in order to minimise inconvenience and effects on their normal study, a 15 hour time limit for the experimental curriculum was planned with one and half hours per week session over a period of ten weeks. The 15 hour time limit of the curriculum transposed into 10 sessions and is outlined as followed:

Session 1 and 2	Activities related to direct nursing matters.	1. Introduction by the educator.
		2. Nursing knowledge and skills.
		3. Ward management.
		4. Hospital policies.
		5. Supervision and staff appraisal.
		6. Nursing audits.
Session 3 and 4	Activities related to hospital context.	7. Communication and inter-professional skills.
		8. Resource allocation.
		9. Extended role of nurse.
		10. Innovation and changes.
Session 5 and 6	Activities relating to pursuing employment in a particular health care setting.	11. Career opportunities and devleopment.
		12. Nurses Awards.
		13. Job description.
Session 7 and 8	Activities related to nurse as a professional.	14. Professional and Industrial organisations.
		15. Nurses Interest groups.
		16. Professional responsibilities and obligations.
		17. Professional philosophy.

Session 9 and 10	Activities related to personal concerns.	18. Role transition. 19. Personal goals. 20. Coping with stress.

5.5.2 The Activities

The researcher takes the position that in modern education, an increasing emphasis should be placed on the student and learning, as opposed to the teacher and teaching. The student is more readily seen as an adult learner who should be expected and allowed to take a considerable amount of responsibility for his/her own learning. To encourage this responsibility and to cater for individual student's goals and learning styles, learning activities should be flexible, individualised and should increase student initiative and autonomy.

The researcher is aware that in encouraging student autonomy he has to adjust his approach to teaching from content transmitter to facilitator of student learning. He has to learn to listen to the student's ideas and follow the student's direction much more than he would do in a teacher-directed situation. Also he needs to learn to recognise the worth of the student's experience and contributions and demonstrate that he values this input. He has to acquire the habit of giving a much greater share of responsibility for learning decisions and outcomes to the student. The student's responsibility is extended accordingly.

In order to implement such a philosophy, it is important to develop activities that can help students to appreciate the scope and context of the experimental curriculum, to gain ideas of what they know and would like to know in the area of continuing nursing education and to think about their needs and interests.

To facilitate the learning activity, each week the researcher conferred with the experimental students and finalised the choice of educational topics for the following

week. A handout was issued in advance of the session (see Appendix H). This contained an outline and overview of the content of the topics, questions to indicate profitable areas of enquiry and reference lists that were of interest. During the session, in a series of discussions, students made additions to the handout and the researcher answered questions. At the end of the session, brief abstracts of recent relevant papers were distributed. With such an approach, it was noted that the students gained in a number of ways: a wide area was covered in a short time, each student became an active learner and participated by prior learning and, above all, many aspects of the topic were raised simultaneously. In this way, the students were provided with a coherent body of knowledge which was easier to understand. They were helped to establish patterns of self-direction in their learning.

5.6 Post-Experiment Procedures

Post-experiment questionnaires were issued to students of the experimental and control groups. Again, these were introduced in a similar manner to previously, in that students were asked to be frank in their expression of their opinions, informed that there was no right or wrong reply to any question, and assured of confidentiality.

An informal session was also arranged with the control and experimental groups before the students left, at which they were free to ask the researcher questions and engage in discussion on all aspects of the research.

Finally, an arrangement was made with the students for the last stage of the experiment, the retention of learning experience.

5.7 Retention Stage Procedures

The retention stage of the experiment took place six months after the students graduated. Post-experimental questionnaires, with code numbers, were sent to students of the experimental and control groups together with a brief covering letter that explained the

objectives of the research and guaranteed the confidential nature of their replies. The students were requested to be frank in their opinions.

Of the total of 74 graduates to whom post-experimental questionnaires were mailed, at the end of six months of the experiment, 39 completed and returned their forms prior to a reminder being sent out. Table 5.12 provides a breakdown of response rate to the initial mailing.

Further questionnaires were returned subsequent to the reminder resulting in an overall response rate of 75.6. Final response rates at the end of six months are given in Table 5.13.

Table 5.12: Response Rates to Initial Mailing at the End of Six Months

	No. of Students	No. of Responding	Response Rate
Experimental Group	37	20	54%
Control Group	37	19	51%
Total	74	39	52.7%

Table 5.13: Final Response Rate at the End of Six Months

	No. of Students	No. of Responding	Response Rate
Experimental Group	37	30	31%
Control Group	37	26	70%
Total	74	56	75.6%

CHAPTER SIX

RESEARCH HYPOTHESES

CHAPTER SIX

RESEARCH HYPOTHESES

Two major purposes of this study were the development and the implementation of a curriculum in continuing nursing education in order to meet the beginning nurse practitioner's career and professional needs. It was hypothesised that the experimental curriculum would enhance the beginning nurse practitioner's awareness of various issues related to continuing nursing education and promote her job satisfaction after entering the workforce.

The awareness and job satisfaction issues have been discussed previously and are further defined here.

The awareness issues are:

1. Policies - Guidelines that help the efficient achievement of continuing nursing education.. These provide information about specific directions, state standards and suggest acceptable actions.

2. Aims of Life Long Learning - Goals toward which continuing nursing education focuses. The accelerating pace of gange that characterises nursing will require that education no longer be concerned primarily with transmitting what is known, but with engaging nurses in a process of enquiry throughout their professional lives.

3. Implementation Process - Educational design of continuing nursing education, the educational content and the methodology used for delivering such content. The content is assessed by its consistency with the stated objectives and whether it is at a suitable level for the selected learners. The methodology is assessed by the appropriateness of techniques to the attainment of the expected objectives for the particular group of learners.

4. Learning Climates - The working environment conducive to continuing education. A favourable climate for learning revolves around positive relationships between nurses and their peers, nursing administration and health professionals and requires of the professionals an ability to identify individual learning needs. This climate allows nurses the freedom to determine their learning needs and to implement change through application of newly learned skills and knowledge.

5. Individual Responsibility - The process in which individual nurses take the initiatives, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes.

The Job satisfaction issues are:

1. Achievement - The perceptions of the nurse about accomplishment or success in her work, about solution of problems, or successful completion of a task by the group to which the nurse belongs.

2. Recognition - Acts of praise and appreciation for the work of the nurse by others. The source could be senior colleagues, peers, other health professionals and patients.

3. Personal Growth - This is the perceived advancement in status or position in relation to the nurse's knowledge, capabilities, skills and talents.

4. Challenging Work - The attitude of the nurse towards an important or difficult task which structures her professional duty and demands specialised skills and abilities.

5. Responsibility - Duty delegated from above to carry out various nursing tasks and for ensuring that the tasks are done correctly and efficiently.

The central hypothesis of this study (null form) is that there is no significant difference between the experimental and control groups in relation to the criterion measures at the end of and six months after the experiment. The other associated hypotheses are that there are no significant differences between the groups of nurses as influenced by two intervening variables, size and location of the hospitals. Size is determined in terms of large or small hospital. A large hospital is defined as one with more than 250 beds while a small hospital has fewer than 250 beds. Location is determined in terms of metropolitan or non-metropolitan hospitals. A metropolitan hospital is a main one in the city area with major facilities. A non-metropolitan hospital, on the other hand, is one that is in the suburbs or a country area and that feeds a metropolitan hospital.

Under more controlled conditions, one would actively locate nurses from the experimental curriculum in a pattern to enable cross tabulation according to size and location of the hospitals. However, an unavoidable design fault in this study is that such stringent control is not possible. There is no way of discerning whether any significant

effect is location driven or size driven or driven by a related but unknown variable such as speciality and non-speciality hospitals. Hence, when examining the location and size of the hospitals, these two variables are combined into one. The large or metropolitan hospital is represented by the central hospital group while the small or non-metropolitan hospital is subsumed under the peripheral hospital group.

1. The Null and Directional Hypotheses

A decision to express research hypotheses in null form or directional statement depends on the relative degree of risk that researchers are willing to take in committing Type 1 or Type 2 errors. In the present study, a Type 1 error amounts to rejecting a null hypothesis when that null hypothesis is in fact true. A Type 2 error will be committed when a null hypothesis is not rejected but is in fact false. It is this kind of relative risk which determines whether a researcher will concentrate on an alpha or beta level in hypothesis testing. The acceptance of directional hypotheses suggests researcher confidence, not only in the rejection of null hypotheses, but also in the rejection of alternative hypotheses. Conversely, the acceptance of null hypotheses tends to forestall consideration of any possible alternatives. It seems to be common practice for researchers to express hypotheses in null form with a view to predicted rejection and the subsequent acceptance of alternative hypotheses. However, King (1989) points out (during his discussion with the researcher) that the convention of formulating all hypotheses in null form incorporates several potential dangers, such as obscuring the hunches of the researcher and serving to facilitate spurious claims to objectivity, so should not be uncritically or without reflection.

In the present study, all hypotheses are in the null form. While the risks mentioned were noted, they had to be balanced in view of other research considerations. In regard to hypotheses about the relationships between experimental curriculum and the criterion measures, the researcher had some hopes and preferences, but no evidence to assert or deny:

(a) that the experimental curriculum would make a difference in the way the nurses respond to criterion measures;

(b) that the experimental curriculum would be the same or different from other kinds of career development activities; and

(c) that the experimental curriculum facilitate or impair nurses' nursing practice.

Hospital size and location were often claimed in the literature to have potential effects on nurses' learning behaviour. Given the lack of empirical research, however, (as distinct from claims) there is no reason for the researcher to support or deny the importance of the central/peripheral dimension.

2. Statement of Hypotheses

2.1 Hypotheses Relating to the First Testing Programme

Awareness of Continuing Nursing Education

1. There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to awareness of:

   1.1 continuing nursing education policies;

   1.2 aims of lifelong learning;

   1.3 implementation processes;

   1.4 learning climate;

   1.5 individual responsibilities.

Job Satisfaction Issues

2. There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to:

   2.1 perceptions of personal achievement;

   2.2 sense of professional recognition;

   2.3 perceptions of personal growth;

2.4 attitudes towards challenging work;

2.5 sense of professional responsibilities.

2.2 Hypotheses Relating to the Second Testing Programme

Awareness of Continuing Nursing Education

3. There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to awareness of:

3.1 continuing nursing education policies;

3.2 aims of lifelong learning;

3.3 implementation processes;

3.4 learning climate;

3.5 individual responsibilities.

Job Satisfaction Issues

4. There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to:

4.1 perceptions of personal achievement;

4.2 sense of professional recognition;

4.3 perceptions of personal growth;

4.4 attitudes towards challenging work;

4.5 sense of professional responsibilities.

2.3 Hypotheses Relating to Changes Between Pretest and First Posttest

Awareness of Continuing Nursing Education

5. There is no significant change from one week to six months between experimental and control groups with respect to awareness of:

   5.1 continuing nursing education policies;

   5.2 aims of lifelong learning;

   5.3 implementation processes;

   5.4 learning climate;

   5.5 individual responsibilities.

Job Satisfaction Issues

6. There is no significant change from one week to six months between experimental and control groups with respect to:

   6.1 perceptions of personal achievement;

   6.2 sense of professional recognition;

   6.3 perceptions of personal growth;

   6.4 attitudes towards challenging work;

   6.5 sense of professional responsibilities.

2.4 Hypotheses Relating to Changes Between First Posttest and Second Posttest

Awareness of Continuing Nursing Education

7. There is no significant change from one week to six months between experimental and control groups with respect to awareness of:

   7.1 continuing nursing education policies;

   7.2 aims of lifelong learning;

   7.3 implementation processes;

   7.4 learning climate;

   7.5 individual responsibilities.

Job Satisfaction Issues

8. There is no significant change from one week to six months between experimental and control groups with respect to:

   8.1 perceptions of personal achievement;

   8.2 sense of professional recognition;

   8.3 perceptions of personal growth;

   8.4 attitudes towards challenging work;

   8.5 sense of professional responsibilities.

2.5 Hypotheses Relating to Intervening Variables After Six Months

Awareness of Continuing Nursing Education

9. There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to awareness of:

   9.1 continuing nursing education policies;

   9.2 aims of lifelong learning;

   9.3 implementation processes;

   9.4 learning climate;

   9.5 individual responsibilities.

Job Satisfaction Issues

10. There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to:

   10.1 perceptions of personal achievement;

   10.2 sense of professional recognition;

   10.3 perceptions of personal growth;

   10.4 attitudes towards challenging work;

   10.5 sense of professional responsibilities.

CHAPTER SEVEN

STATISTICAL SUMMARY

CHAPTER SEVEN
STATISTICAL SUMMARY

There were two main parts to the outcome measures. In the first part, the main and basic question was the effectiveness of the career-stages curriculum in relation to nurses' attitudes about continuing nursing education. The second part was concerned with the relationship between the curriculum and nurses' feelings of job satisfaction.

The criterion measures referred to throughout are the previously validated continuing nursing education awareness index and the nurses' job satisfaction profile. The statistical data of these measures are presented in Appendices C and D.

The internal validity of the experiment rested upon the demonstration of pairing the students in the two groups. Before any questions could be answered as to the effectiveness of the experimental curriculum, it was essential to know, in relation to each group, the "starting off" points in terms of criterion measures. Pretesting was therefore an important feature of this experimental design.

Analysis of the pretest showed a mean score for the experimental group nurses of 123.4 and the control group nurses of 123.1 on the continuing education awareness index (Table 7.2); and 134.8 for the experimental group and 131.3 for the control group measured on the job satisfaction profile (Table 7.12). There was no statistically significant (0.05 level) difference between the experimental and control groups on pretest. The initial equivalence of grouping of nurses was therefore satisfactorily confirmed.

The first question to be answered, in regard to the experimental group, was whether they had learned as a result of the experimental curriculum - whether their scores were higher at the end of the experiment than at the beginning. The answer was clearly positive. As

measured by the difference between the first posttest and pretest results of the education awareness index, the exposure to the experimental curriculum resulted in a mean gain score of 17.1 points for the experimental group, and only 2.9 points for the control group, a difference of 14.2 points in favour of the experimental group (Table 7.2) and, statistically, highly significant.

In regard to job satisfaction, the gain in scores between the first posttest and the pretest was 26.7 points for the experimental group and 3.2 points for the control group, a difference of 23.5 points in favour of the experimental group (Table 7.12) and, statistically, also highly significant.

Changes in attitudes were also demonstrated for the nurses in both groups when tested again after they had been in the clinical areas for six months. In regard to the continuing education awareness index, the experimental group mean was 160.5 and the control group mean was 146 points (Table 7.2), a difference of 13.5 points in favour of the experimental group and, statistically, significant.

The job satisfaction scores, on the other hand, presented a somewhat different picture from the education awareness index. In the experimental group, the second posttest mean score was 12.5 points less than the first posttest and, in the control group, it was 20.5 points more than the first posttest (Table 7.12). There was clear evidence of job dissatisfaction among the experimental group after a six month period while the control group demonstrated an improvement in job satisfaction. When the two groups were compared, a difference of six points in favour of the control group appeared.

The statistical summaries are presented in the following section. This section has two purposes. The first is to tabulate the data obtained on criterion measures of nurses' awareness to continuing education and job satisfaction. These results are summarised across each of the main sets of variables, experimental and control groups, and central

and peripheral hospital groups. Tables 7.1 to 7.20 inclusive show the means, standard deviations and standard errors for the groups combined into the above sets of variables.

The second purpose is to test the hypotheses detailed in the previous chapter so that differences between, and relative changes over time in the various groups can be identified. Tables 7.21 to 7.70 and Figures 7.2 to 7.11 inclusive summarise the results of the hypothesis-testing procedure. Each figure consists of a graphical presentation of the results. For each hypothesis examined, the raw data are given first, followed by analysis of that data and then a discussion of the hypothesis.

One problem arising from the graphical presentation using only two or three data gathering points over a period of time is that straight line graphs are the only reasonably safe (conservative) means of display. However, this portrayal carries the inherent risk that the true relationship may be curvilinear; that is, significantly different from the gradient plotted. The problem is largely overcome by the assumption of linearity in covariance analysis. Such an assumption requires that the relationship between the covariate and the dependent variable be linear rather than nonlinear. Hence, suggestions about nonlinear functions are reserved for the discussion sections.

The use of t-test and analysis of covariance (Figure 7.1) as the main statistical tools requires some explanations.

Because of the exploratory nature of the present work, it was decided to organise the data around simple signficance testing. This decision was deemed justifiable on the ground that the work was proceeding within a little-researched area without any highly supported extant hypotheses. As a consequence of this decision, the t-test (independent means) was used to compare nurses' gains and losses between experimental and control groups. The analysis of covariance was employed to remove extraneous variation from the dependent variable, thereby increasing measurement precision.

Figure 7.1: Summary of Statistical Tools Used in the Study

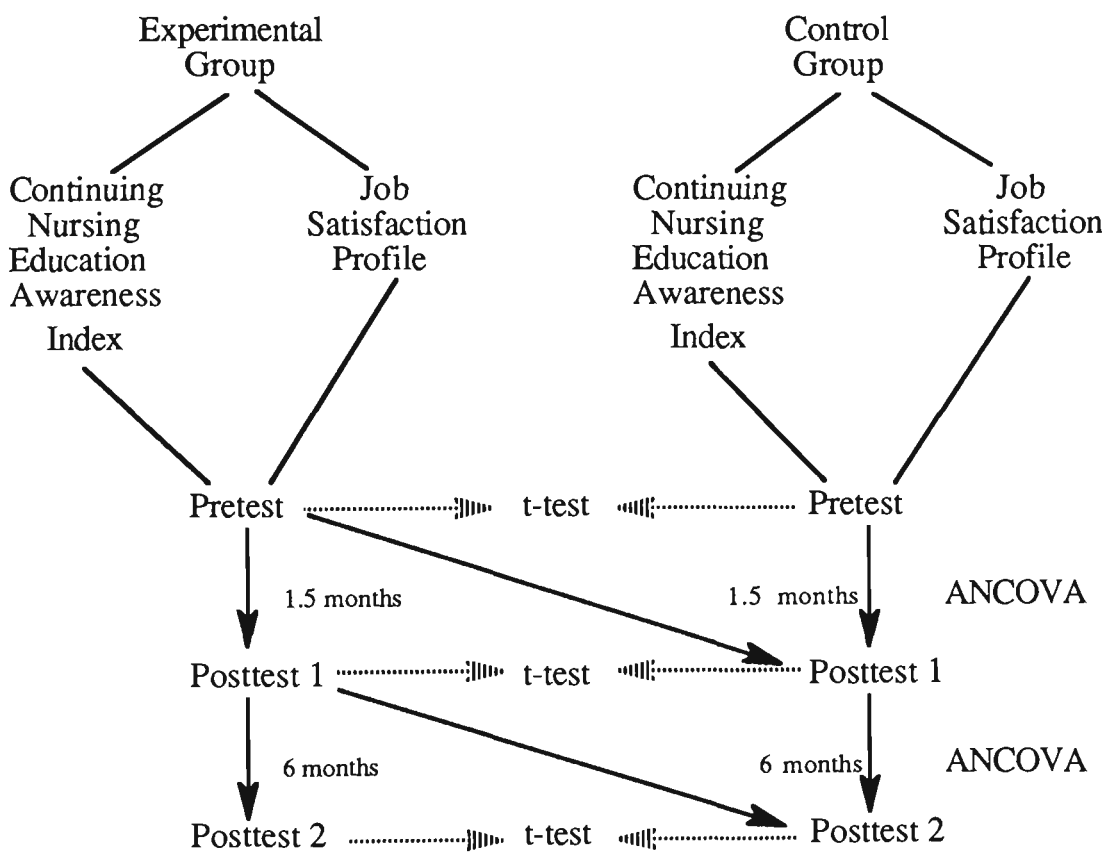


Table 7.1: Continuing Nursing Education Awareness Index: Comparison of Total Scores between Experimental and Control Groups at Pretest, First Posttest and Second Posttest

	Total Scores					
	Pretest		1st Posttest		2nd Posttest	
	Exp.Gp. N = 37	Cont.Gp. N = 37	Exp.Gp N = 37	Cont.Gp. N = 32	Exp.Gp N = 30	Cont.Gp. N = 26
1. Policy Issues	893	895	1130	823	962	735
2. Lifelong Learning	952	961	1107	820	920	759
3. Implementation Process	906	894	1040	775	889	730
4. Learning Climate	912	996	999	805	876	750
5. Individual Responsibility	904	889	1006	781	920	789
TOTAL	4567	4635	5282	4004	4567	3763

Table 7.2: Continuing Nursing Education Awareness Index: Comparison of Mean Scores between Experimental and Control Groups at Pretest, First Posttest and Second Posttest

	Mean Scores					
	Pretest		1st Posttest		2nd Posttest	
	Exp.Gp. N = 37	Cont.Gp. N = 37	Exp.Gp N = 37	Cont.Gp. N = 32	Exp.Gp N = 30	Cont.Gp. N = 26
1. Policy Issues	24.14	24.19	30.54	25.72	32.07	28.27
2. Lifelong Learning	25.73	25.97	34.59	25.63	30.67	29.19
3. Implementation Process	24.49	24.16	28.10	25.83	29.63	28.07
4. Learning Climate	24.65	26.91	27	25.15	29.2	28.84
5. Individual Responsibility	24.43	24.03	27.19	24.41	30.66	30.34
TOTAL	123.4	123.1	140.5	126	160.5	146

Table 7.3: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at Pretest (N=37)

Experimental Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	24.1	4.42	0.72
2. Aims of Lifelong Learning	25.7	3.8	0.63
3. Implementation Process	24.5	3.32	0.55
4. Learning Climate	24.7	4.13	0.68
5. Individual Responsibility	24.4	3.99	0.68

Table 7.4: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at First Posttest (N=37)

Experimental Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	30.5	3.48	0.57
2. Aims of Lifelong Learning	29.9	2.5	0.41
3. Implementation Process	28.1	1.79	0.29
4. Learning Climate	27	2.37	0.39
5. Individual Responsibility	27.2	4.48	0.74

Table 7.5: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at Second Posttest (N=30)

Experimental Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	32.1	2.66	0.48
2. Aims of Lifelong Learning	30.7	3.12	0.57
3. Implementation Process	29.6	2.66	0.48
4. Learning Climate	29.2	3.2	0.59
5. Individual Responsibility	30.7	2.27	0.41

Table 7.6: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at Pretest (N=37)

Control Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	24.2	3.04	0.5
2. Aims of Lifelong Learning	26	2.37	0.39
3. Implementation Process	24.2	2.85	0.47
4. Learning Climate	24.7	2.57	0.42
5. Individual Responsibility	24	3.12	0.51

Table 7.7: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at First Posttest (N=32)

Control Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	25.7	3.18	0.56
2. Aims of Lifelong Learning	25.6	3.11	0.55
3. Implementation Process	25.8	3.33	0.59
4. Learning Climate	25.2	3.28	0.58
5. Individual Responsibility	24.4	4.11	0.73

Table 7.8: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at Second Posttest (N=26)

Control Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	28.3	3.25	0.64
2. Aims of Lifelong Learning	29.2	2.95	0.58
3. Implementation Process	28.1	2.53	0.5
4. Learning Climate	28.8	3.05	0.6
5. Individual Responsibility	30.3	2.67	0.52

Table 7.9: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at Second Posttest (N=22)

Central Hospital Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	29.2	3.79	0.81
2. Aims of Lifelong Learning	28.8	2.87	0.61
3. Implementation Process	32.1	3.19	0.68
4. Learning Climate	29.6	3.74	0.8
5. Individual Responsibility	30.3	2.15	0.46

Table 7.10: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index at Second Posttest (N=32)

Peripheral Hospital Group

Criterion	Mean	S.D.	S.E.
1. Policy Issues	32.6	4.56	0.8
2. Aims of Lifelong Learning	29.6	2.58	0.46
3. Implementation Process	30.7	3.23	0.57
4. Learning Climate	30.7	2.71	0.39
5. Individual Responsibility	29.2	3.11	0.55

Table 7.11: Job Satisfaction Profile: Comparison of Total Scores between Experimental and Control Groups at Pretest, First Posttest and Second Posttest

	Total Scores					
	Pretest		1st Posttest		2nd Posttest	
	Exp.Gp. N = 37	Cont.Gp. N = 37	Exp.Gp N = 37	Cont.Gp. N = 32	Exp.Gp N = 30	Cont.Gp. N = 26
1. Achievement	1061	1036	1160	893	990	840
2. Recognition	1033	956	1157	861	912	787
3. Growth	1017	966	1220	829	895	805
4. Challenging Work	1068	992	1195	914	983	785
5. Responsibility	993	910	1194	816	980	797
TOTAL	5172	4860	5926	4313	4910	4014

Table 7.12: Job Satisfaction Profile: Comparison of Mean Scores between Experimental and Control Groups at Pretest, First Posttest and Second Posttest

	Mean Scores					
	Pretest		1st Posttest		2nd Posttest	
	Exp.Gp. N = 37	Cont.Gp. N = 37	Exp.Gp N = 37	Cont.Gp. N = 32	Exp.Gp N = 30	Cont.Gp. N = 26
1. Perceptions of Personal Achievement	28.67	28	31.35	27.9	33	32.3
2. Sense of Professional Recognition	27.92	25.84	31.27	26.9	30.4	30.26
3. Perceptions of Personal Growth	27.48	26.1	32.97	25.9	29.83	30.96
4. Attitudes towards Challenging Work	28.86	26.81	32.29	28.56	32.76	30.2
5. Sense of Professional Responsibility	26.83	24.59	32.27	25.5	32.6	30.65
TOTAL	134.8	131.3	161.5	134.5	149	155

Table 7.13: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at Pretest (N=37)

Experimental Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	28.7	3.5	0.58
2. Sense of Professional Recognition	27.9	4.6	0.77
3. Perceptions of Personal Growth	27.5	4.13	0.68
4. Attitudes towards Challenging Work	28.9	4.69	0.77
5. Sense of Professional Responsibility	26.8	3.97	0.65

Table 7.14: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at First Posttest (N=37)

Experimental Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	31.4	3.24	0.53
2. Sense of Professional Recognition	31.3	3.04	0.5
3. Perceptions of Personal Growth	33	3.62	0.6
4. Attitudes towards Challenging Work	32.3	4.09	0.67
5. Sense of Professional Responsibility	32.3	3.14	0.52

Table 7.15: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at Second Posttest (N=30)

Experimental Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	33	3.07	0.56
2. Sense of Professional Recognition	30.4	2.92	0.53
3. Perceptions of Personal Growth	29.8	2.73	0.5
4. Attitudes towards Challenging Work	32.8	3.09	0.56
5. Sense of Professional Responsibility	32.6	2.75	0.5

Table 7.16: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at Pretest (N=37)

Control Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	28	3.06	0.5
2. Sense of Professional Recognition	25.8	3.38	0.56
3. Perceptions of Personal Growth	26.1	3.42	0.56
4. Attitudes towards Challenging Work	26.8	3.28	0.54
5. Sense of Professional Responsibility	24.6	3.66	0.6

Table 7.17: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at First Posttest (N=32)

Control Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	27.9	3.63	0.64
2. Sense of Professional Recognition	26.9	3.24	0.57
3. Perceptions of Personal Growth	25.9	3.07	0.54
4. Attitudes towards Challenging Work	28.6	4.51	0.8
5. Sense of Professional Responsibility	25.5	4.15	0.73

Table 7.18: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at Second Posttest (N=26)

Control Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	32.3	2.97	0.58
2. Sense of Professional Recognition	30.3	3.63	0.71
3. Perceptions of Personal Growth	31	3.03	0.59
4. Attitudes towards Challenging Work	30.2	4.04	0.79
5. Sense of Professional Responsibility	30.7	3.62	0.71

Table 7.19: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at Second Posttest (N=22)

Central Hospital Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	30.6	4.06	0.87
2. Sense of Professional Recognition	30.2	4.34	0.93
3. Perceptions of Personal Growth	32.3	3.33	0.71
4. Attitudes towards Challenging Work	30.3	3.66	0.78
5. Sense of Professional Responsibility	31	4.25	0.91

Table 7.20: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile at Second Posttest (N=32)

Peripheral Hospital Group

Criterion	Mean	S.D.	S.E.
1. Perceptions of Personal Achievment	30.4	2.91	0.51
2. Sense of Professional Recognition	33	2.97	0.52
3. Perceptions of Personal Growth	32.6	2.67	0.47
4. Attitudes towards Challenging Work	30.4	2.88	0.51
5. Sense of Professional Responsibility	29.8	2.78	0.49

1. Hypotheses Relating to Differences between Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Hypotheses 1.1 through 1.5 and 3.1 through 3.5)

1.1 Hypotheses 1.1 and 3.1

Hypothesis 1.1

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to awareness of continuing nursing education policy issues.

The raw data and computation relevant to hypothesis 1.1 is in Appendix C, and summarised in Table 7.21 below.

Table 7.21: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Policy Issues) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	30.5	3.48	0.57	0.05	2	67	5.8
C	32	25.7	3.18	0.56				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to awareness of continuing nursing education policy issues at first posttest is significant.

Hypothesis 3.1

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to awareness of continuing nursing education policy issues.

The raw data and computation relevant to hypothesis 3.1 is in Appendix C, and summarised in Table 7.22 below.

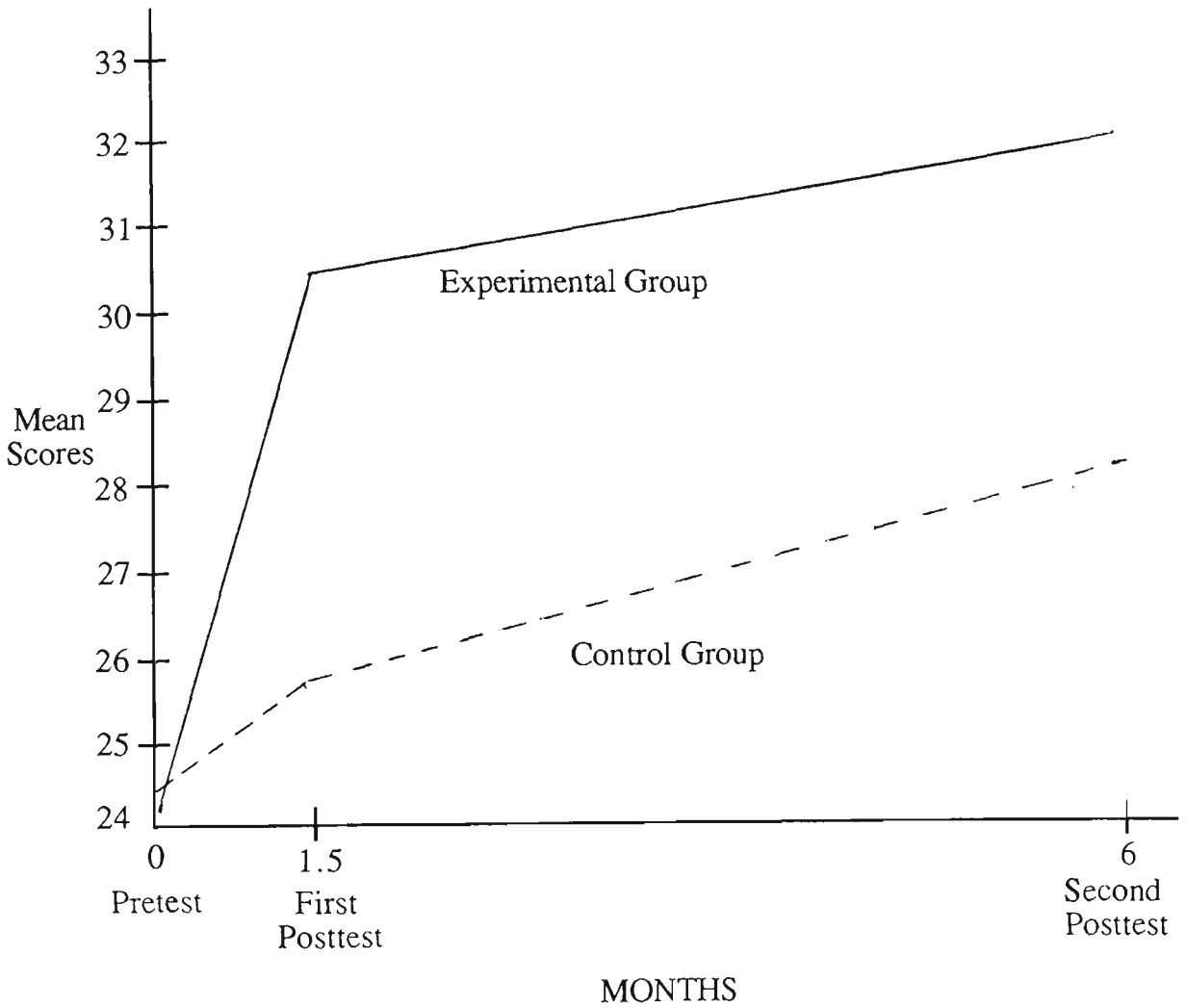
Table 7.22: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Policy Issues) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	32.1	2.66	0.48	0.05	2.01	54	4.87
C	26	28.3	3.25	0.64				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to awareness of continuing nursing education policy issues at second posttest is significant.

Figure 7.2: Summary of Results for Experimental and Control Groups on Continuing Nursing Education Awareness Index (Policy Issues) at First and Second Posttest



1.1.1 Discussion on Hypotheses 1.1 and 3.1

Tables 7.21, 7.22 and Figure 7.2 summarise the differences between the experimental and control groups on awareness of continuing nursing education policy issues.

During the experimental curriculum, the beginning nurse practitioners were helped to understand the goals and standards of continuing nursing education programme and the guidelines that enable the efficient achievement of these goals and standards. The experimental group improved significantly from the pretest to the first posttest and improved slightly at the second posttest. The control group, with similar scores at the pretest, increased slightly at the first posttest but moved progressively by the time of second posttest.

When compared at the first posttest, the two groups were significantly different from each other. When compared again six months later, the difference remained significant though diminishing.

This result indicates that the experimental group was much more aware of the continuing nursing education policy issues at the end of exposure to the experimental curriculum. This level of awareness remained significant six months later with the experimental group still holding somewhat more positive attitudes, although at this point the control group showed a developing awareness of continuing education policies probably due to their experience in the clinical areas and their attendance at inservice programmes after entering the workforce.

1.2 Hypotheses 1.2 and 3.2

Hypothesis 1.2

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to awareness of aims of lifelong learning.

The raw data and computation relevant to hypothesis 1.2 is in Appendix C, and summarised in Table 7.23 below.

Table 7.23: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	29.9	2.5	0.41	0.05	2	67	6.23
C	32	25.6	3.11	0.55				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to awareness of aims of lifelong learning at first posttest is significant.

Hypothesis 3.2

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to awareness of lifelong learning.

The raw data and computation relevant to hypothesis 3.2 is in Appendix C, and summarised in Table 7.24 below.

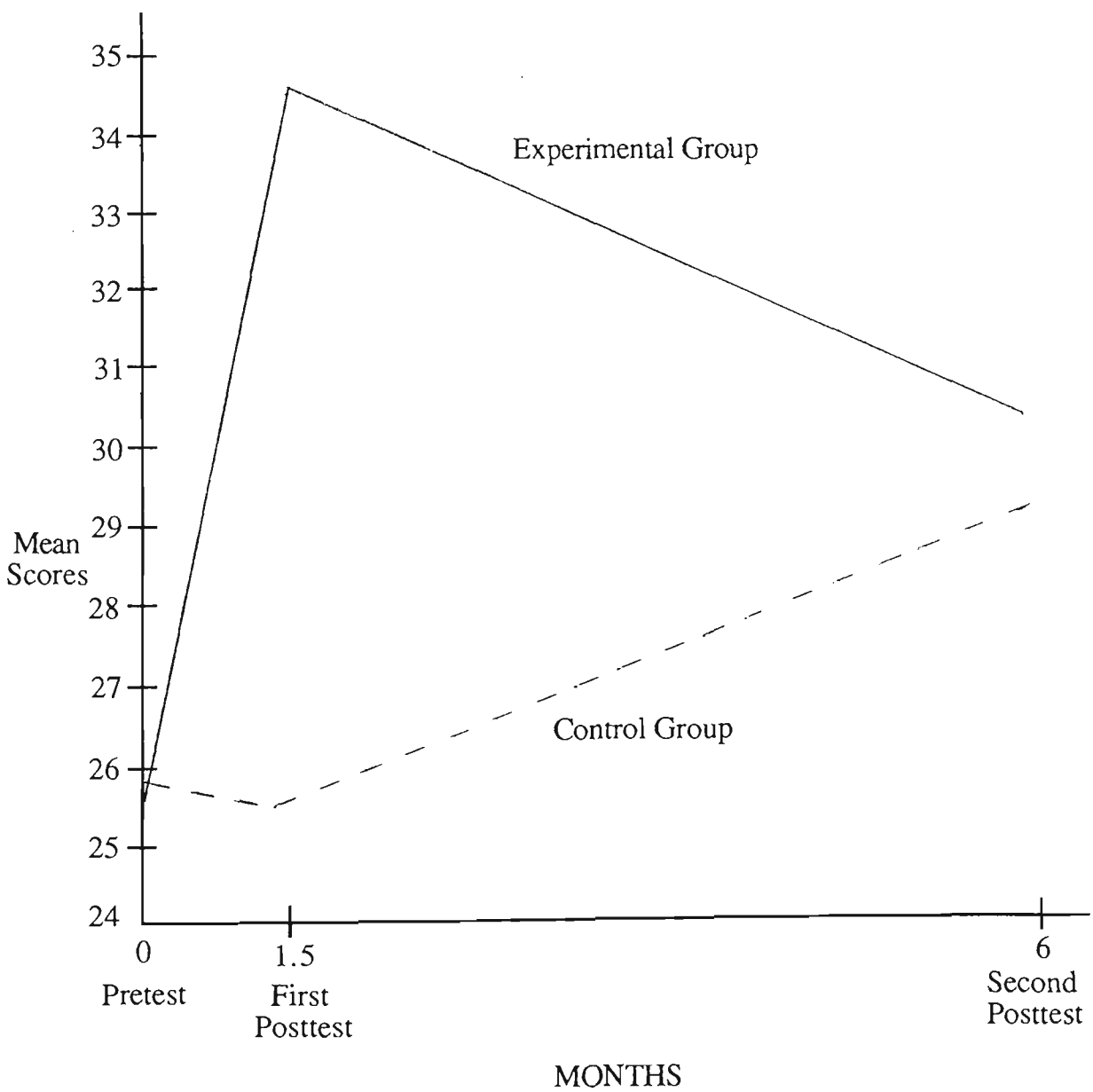
Table 7.24: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	30.7	3.12	0.57	0.05	2.01	54	1.85
C	26	29.2	2.95	0.58				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between experimental and control groups with respect to awareness of aims of lifelong learning at second posttest is not significant.

Figure 7.3: Summary of Results for Experimental and Control Groups on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at First and Second Posttest



1.2.1 Discussion of Hypotheses 1.2 and 3.2

Tables 7.23, 7.24 and Figure 7.3 summarise the results of testing hypotheses 1.2 and 3.2 on differences between experimental and control groups on awareness of aims of lifelong learning.

As described previously, the accelerating pace of change that characterises nursing requires that nursing education no longer be concerned only with transmitting an apparently immutable body of knowledge, but with engaging nurses in a process of enquiry throughout their professional lives. The actual mean score indicates that the experimental group had moved positively at the first posttest and then became increasingly negative by the time of second posttest. The control group, while levelling between the pretest and first posttest, became more positive about the time of the second posttest with the score approaching that of the experimental group.

When compared immediately after the experimental curriculum, the experimental and control groups were significantly different from each other, with the experimental group holding more positive attitudes. When compared again six months later, the difference was no longer significant.

This result suggests that the experimental group had developed positive attitudes consequent to exposure to the experimental curriculum. The deterioration of the score of the experimental group after they had entered the workforce, while negative in direction, may be an indication that the nurses were more concerned with acquiring factual knowledge and skills rather than the process of enquiry as intended in the curriculum. This seems more probable than an explanation suggesting that the experimental group were lacking commitment to lifelong learning. The difference at the second posttest, while not significant in itself, still demonstrated that the experimental group had higher mean score than the control group.

The improved score of the control group at the second posttest may be due to the fact that this group of nurses, being newly graduated, were enthusiastic in learning about and exploring their new roles in clinical areas.

1.3 Hypotheses 1.3 and 3.3

Hypothesis 1.3

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to awareness of implementation process.

The raw data and computation relevant to hypothesis 1.3 is in Appendix C, and summarised in Table 7.25 below.

Table 7.25: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Implementation Process) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	28.1	1.79	0.29	0.05	2	67	3.59
C	32	25.8	3.33	0.59				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to awareness of implementation process at first posttest is significant.

Hypothesis 3.3

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to awareness of implementation process.

The raw data and computation relevant to hypothesis 3.3 is in Appendix C, and summarised in Table 7.26 below.

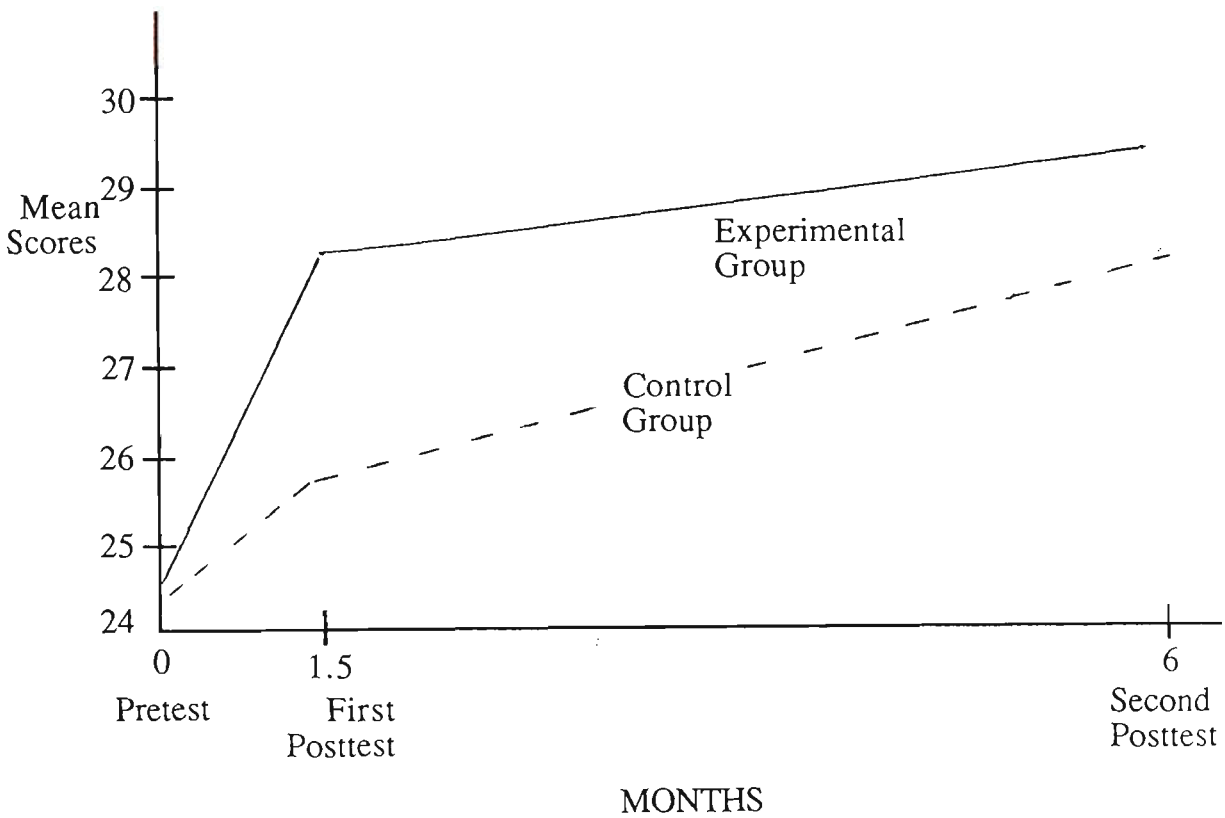
Table 7.26: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Implementation Process) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	29.6	2.66	0.48	0.05	2.01	54	2.17
C	26	28.1	2.53	0.5				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to awareness of aims of lifelong learning at second posttest is significant.

Figure 7.4: Summary of Results for Experimental and Control Groups on Continuing Nursing Education Awareness Index (Implementation Process) at First and Second Posttest



1.3.1 Discussion on Hypotheses 1.3 and 3.3

Tables 7.25, 7.26 and Figure 7.4 summarise the differences of mean scores for experimental and control groups on awareness of implementation process.

The experimental curriculum focused on activities that facilitate learning and involve the nurses in the implementation process. Implementation, it will be recalled, also

emphasised the concept of andragogy as opposed to pedagogy. When the actual mean score is inspected, the experimental group is seen to have continued to grow in awareness after the experiment. This positive direction, however, was at a slower rate at the second posttest. The control group had also improved in awareness by the second posttest, but more positively from a lower base.

When compared at the first posttest, the two groups were significantly different from each other, the experimental group having much higher scores. Though the differences in actual mean scores were narrowing six months later, the gap was still significant.

The experimental curriculum enabled the beginning nurse practitioners to experience how continuing nursing education programme can be implemented, when the principle of andragogy is applied. The increase in scores among the control group may be due to the fact that this group of nurses had been participating in hospital inservice programmes since graduation, where by good luck, a variety of learning experiences had been implemented.

1.4 Hypotheses 1.4 and 3.4

Hypothesis 1.4

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to awareness of learning climate.

The raw data and computation relevant to hypothesis 1.4 is in Appendix C, and summarised in Table 7.27 on the next page.

Table 7.27: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Learning Climate) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	27	2.37	0.39	0.05	2	67	2.61
C	32	25.2	3.28	0.58				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to awareness of learning climate at first posttest is significant.

Hypothesis 3.4

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to awareness of learning climate.

The raw data and computation relevant to hypothesis 3.4 is in Appendix C, and summarised in Table 7.28 below.

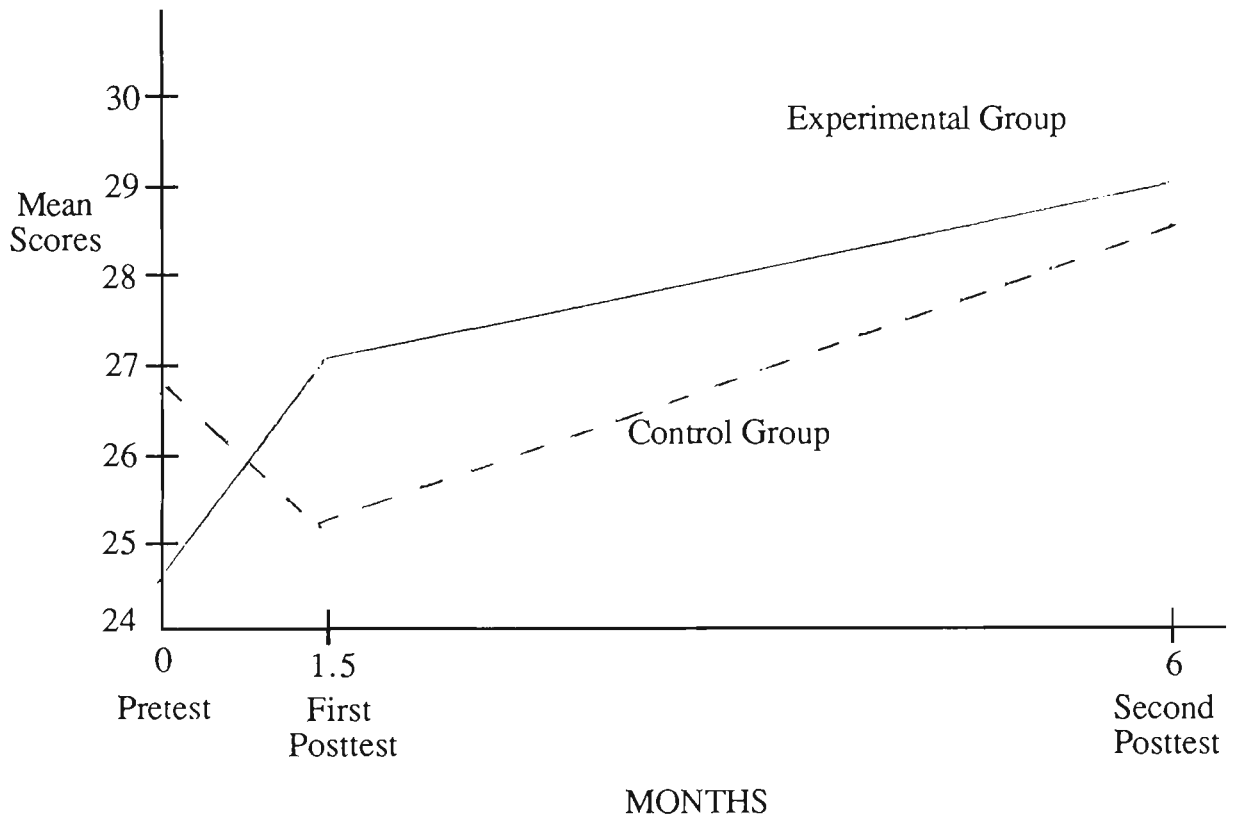
Table 7.28: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Learning Climate) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	29.2	3.2	0.59	0.05	2.01	54	0.48
C	26	28.8	3.05	0.6				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between experimental and control groups with respect to awareness of learning climate at second posttest is not significant.

Figure 7.5: Summary of Results for Experimental and Control Groups on Continuing Nursing Education Awareness Index (Learning Climate) at First and Second Posttest



1.4.1 Discussion on Hypotheses 1.4 and 3.4

Tables 7.27, 7.28 and Figure 7.5 summarise the differences of mean scores for experimental and control groups on awareness of learning climate.

Opportunities for further learning are always available in the clinical areas. If professional nurses are to develop the concept of lifelong learning, that learning climate must be supportive. During the experimental curriculum, the concept of the learning climate was examined, the roles of the senior nurses and relationships and issues were discussed.

When the actual mean score of this dimension is inspected the experimental group is found to have developed both at the first and second posttest. The control group, which had higher pretest scores initially, deteriorated slightly at the first posttest before improving by the second posttest.

When compared at the first posttest, the experimental and control groups were significantly different from each other. However, it is possible that the size of the difference at first posttest represents a deterioation in the control that is, for the moment, unaccountable. When compared again six months later, the significance in difference disappeared with the control group having gained at a faster rate and, by this time, apparently approaching the mean score of the experimental group.

This result suggests that relative differences in awareness of leraning climate may have developed as a result of the experimental curriculum. However, once in the clinical areas, the differences between the two groups diminished to the point of non-significance. Although the experimental group still continued positively, it was the control group that was improving at a faster rate; perhaps indicating that the clinical areas may have provided some intervening effects.

1.5 Hypotheses 1.5 and 3.5

Hypothesis 1.5

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to awareness of individual responsibility.

The raw data and computation relevant to hypothesis 1.5 is in Appendix C, and summarised in Table 7.29 on the next page.

Table 7.29: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Individual Responsibility) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	27.2	4.48	0.74	0.05	2	67	2.64
C	32	24.4	4.11	0.73				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to awareness of individual responsibility at first posttest is significant.

Hypothesis 3.5

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to awareness of individual responsibility.

The raw data and computation relevant to hypothesis 3.5 is in Appendix C, and summarised in Table 7.30 below.

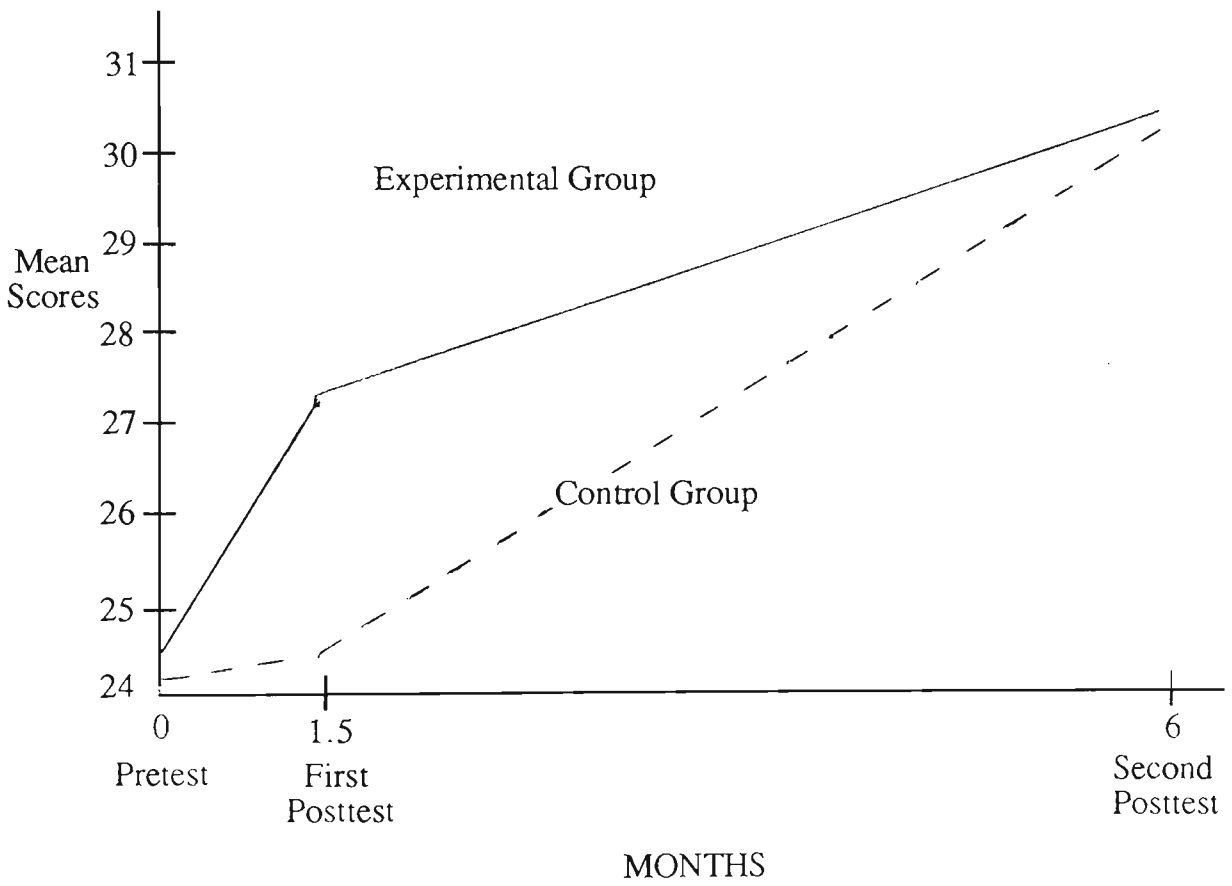
Table 7.30: Analysis of t-test for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Individual Responsibility) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	30.7	2.27	0.41	0.05	2.01	54	0.62
C	26	30.3	2.67	0.52				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between experimental and control groups with respect to awareness of individual responsibility at second posttest is not significant.

Figure 7.6: Summary of Results for Experimental and Control Groups on Continuing Nursing Education Awareness Index (Individual Responsibility) at First and Second Posttest



1.5.1 Discussion of Hypotheses 1.5 and 3.5

Tables 7.29, 7.30 and Figure 7.6 summarise the differences between experimental and control groups on awareness of aims of individual responsibility.

The experimental curriculum aimed to enable nurses to take initiatives in diagnosing their own learning needs, formulating their own learning goals, choosing appropriate learning resources and strategies and evaluating their learning outcomes.

When the mean scores of the experimental and control groups are inspected, the experimental group, which was slightly more positive at the pretest, is seen to have become more progressive at the first posttest. This positive trend continued even six months later. However, an interesting point is that the control group, which had a relatively lower mean score at the first posttest, nevertheless approached the mean score of the experimental group by the time of second posttest.

When compared at the first posttest, the experimental group mean score was signficantly higher than that of the control group. However, when compared again six months later, the mean score of the experimental group is only slightly higher than that of the control group with the difference no longer significant.

This result suggests that the experimental group was more accepting of individual responsibility in learning, immediately after the experiment. Such acceptance persisted in a positive direction even six months later. The control group, while relatively less accepting than their counterparts, had become more positve after they had entered the workforce (to the point of overtaking the experimental group). This again indicates the possible intervening effect, which may be by chance, of the clinical areas.

2. Hypotheses Relating to Differences between Experimental and Control Groups Measured on Job Satisfaction Profile (Hypotheses 2.1 through 2.5 and 4.1 through 4.5)

2.1 Hypotheses 2.1 and 4.1

Hypothesis 2.1

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to perceptions of personal achievement.

The raw data and computation relevant to hypothesis 2.1 is in Appendix D, and summarised in Table 7.31 below.

Table 7.31: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Achievement) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	31.4	3.24	0.53	0.05	2	67	4.17
C	32	27.9	3.63	0.64				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to perceptions of personal achievement at first posttest is significant.

Hypothesis 4.1

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to perceptions of personal achievement.

The raw data and computation relevant to hypothesis 4.1 is in Appendix D, and summarised in Table 7.32 on the next page.

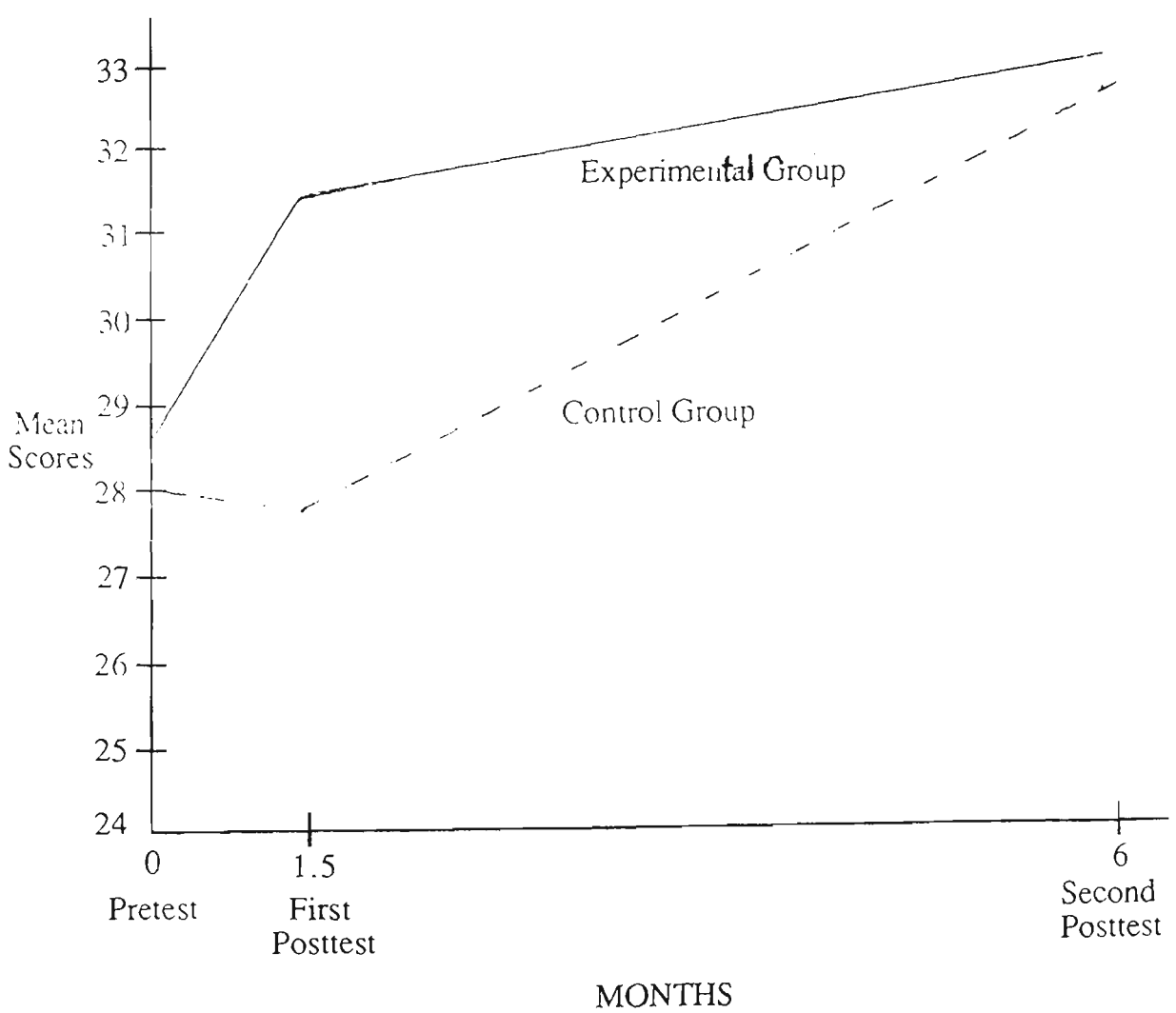
Table 7.32: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Achievement) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	33	3.07	0.56	0.05	2.01	54	0.87
C	26	32.3	2.97	0.58				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between experimental and control groups with respect to perceptions of personal achievement at second posttest is not significant.

Figure 7.7: Summary of Results for Experimental and Control Groups on Job Satisfaction Profile (Perceptions of Personal Achievement) at First and Second Posttest



2.1.1 Discussion on Hypotheses 2.1 and 4.1

Tables 7.31, 7.32 and Figure 7.7 summarise the results of testing hypotheses 2.1 and 4.1 related to the difference between the experimental and control groups measured on perceptions of personal achievement.

When the mean scores are inspected, the experimental group is seen to have higher perception scores immediately after the experimental programme. The perceptions of personal achievement continued positively, though at a slower rate, after these nurses had entered the workforce. The control group, while having similar perceptions at both pretest and first posttest, perceived greater personal achievement once they had been in the clinical areas for six months.

When compared at the first posttest, the difference between the experimental and control groups was significant with the experimental group perceiving considerable personal achievement. When compared again six months later, there was virtually no difference, although the perceptions of both groups continued to improve. In fact, the control group from its lower base at first posttest, underwent a very signficant change in perception of personal achievement.

This result suggests that although the experimental group nurses were clearer about their capacity and performance to nursing problems immediately after the experiment, there may be some kind of "ceiling" on personal achievement that is approached by virtually all nurses in their first year of employment. This sense of personal achievement is probably capable of being reached through clinical experience, but approached more quickly (with consequent advantages to nursing organisation and the nurse) with the stimulus of an effective career stage-oriented curriculum.

2.2 Hypotheses 2.2 and 4.2

Hypothesis 2.2

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to sense of professional recognition.

The raw data and computation relevant to hypothesis 2.2 is in Appendix D, and summarised in Table 7.33 below.

Table 7.33: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Recognition) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	31.3	3.04	0.5	0.05	2	67	5.71
C	32	26.9	3.24	0.57				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to sense of professional recognition at first posttest is significant.

Hypothesis 4.2

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to sense of professional recognition.

The raw data and computation relevant to hypothesis 4.2 is in Appendix D, and summarised in Table 7.34 on the next page.

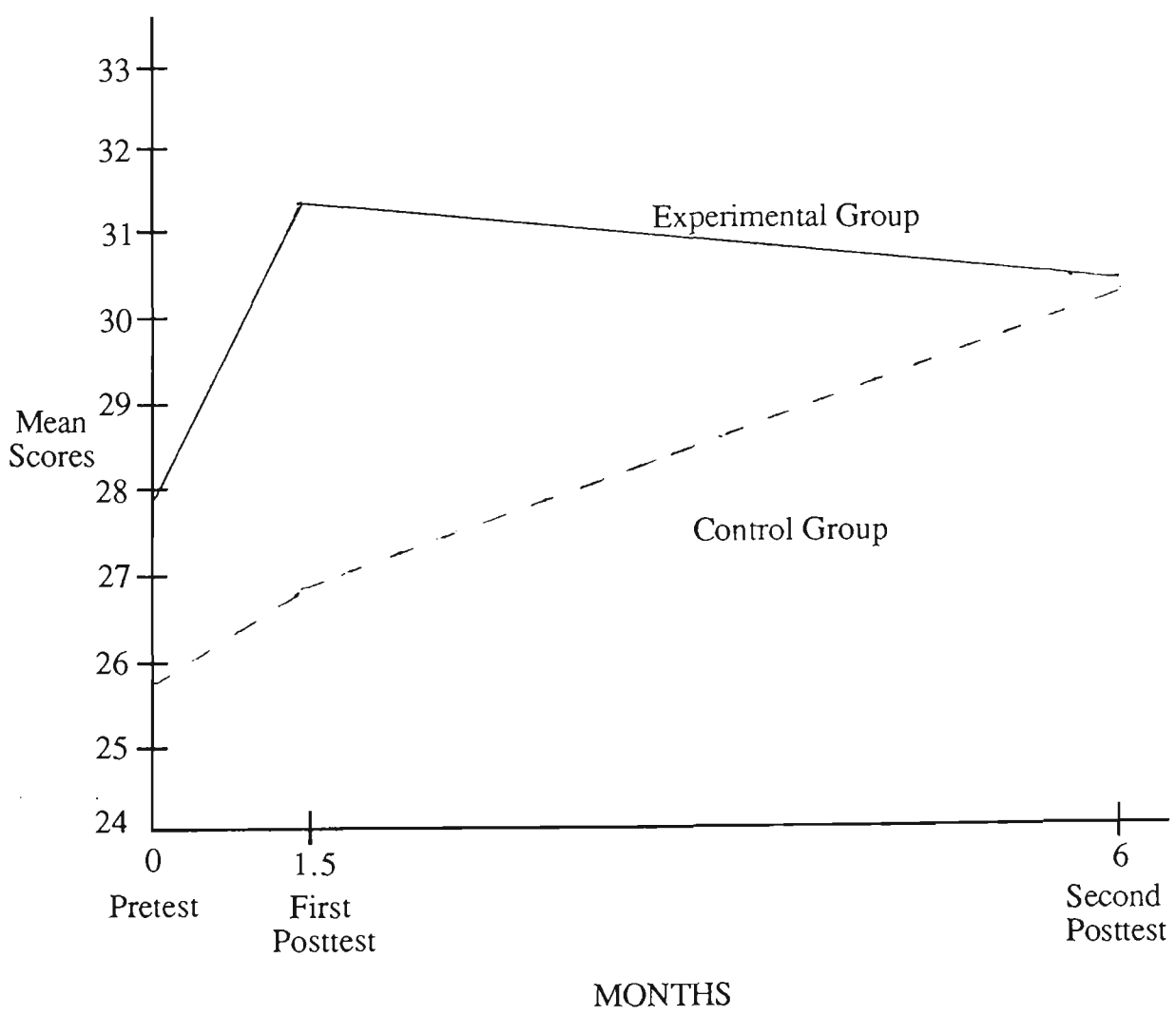
Table 7.34: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Recognition) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	30.4	2.92	0.53	0.05	2.01	54	0.12
C	26	30.3	3.63	0.71				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between experimental and control groups with respect to sense of professional recognition at second posttest is not significant.

Figure 7.8: Summary of Results for Experimental and Control Groups on Job Satisfaction Profile (Sense of Professional Recognition) at First and Second Posttest



2.2.1 Discussion on Hypotheses 2.2 and 4.2

Tables 7.33, 7.34 and Figure 7.8 summarise the differences between the experimental and control groups measured on sense of professional recognition.

Recognition was defined as the perceived acts of praise and appreciation for the work of the nurse by others, whether colleagues or patients.

When the mean scores are examined, it can be seen that the experimental group perceived a high level of recognition immediately following the experimental programme. However, this sense of recognition deteriorated slowly after they had entered the clinical areas. The control group, on the other hand, had progressed steadily from pretest to first posttest and second posttest with scores at the second posttest approaching those of the experimental group.

When compared at the first posttest there was a significant difference between the experimental and control groups. However, six months later, there was no significant difference.

A possible explanation for this result may be that by the end of the programme, the experimental group nurses were feeling better about nursing tasks. However, the perception in this case was divorced from reality; representing feelings and not much else. Consequently, once in the clinical area, these nurses did not attract a higher recognition.

Alternatively, it is likely that these nurses were in fact actually better at nursing tasks and their perceptions merely reflected reality. Unfortunately due to their junior positions, such higher recognition was not forthcoming. The control group nurses, on the other hand, had improved their sense of recognition as a consequent upon their newly registered nurse status. In addition, they had also improved on the jobs. Their

recognition came only as they improved incrementally.

2.3 Hypotheses 2.3 and 4.3

Hypothesis 2.3

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to perceptions of personal growth.

The raw data and computation relevant to hypothesis 2.3 is in Appendix D, and summarised in Table 7.35 below.

Table 7.35: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Growth) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	33	3.62	0.6	0.05	2	67	9.39
C	32	25.9	3.07	0.54				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to perceptions of professional growth at first posttest is significant.

Hypothesis 4.3

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to perceptions of personal growth.

The raw data and computation relevant to hypothesis 4.3 is in Appendix D, and summarised in Table 7.36 on the next page.

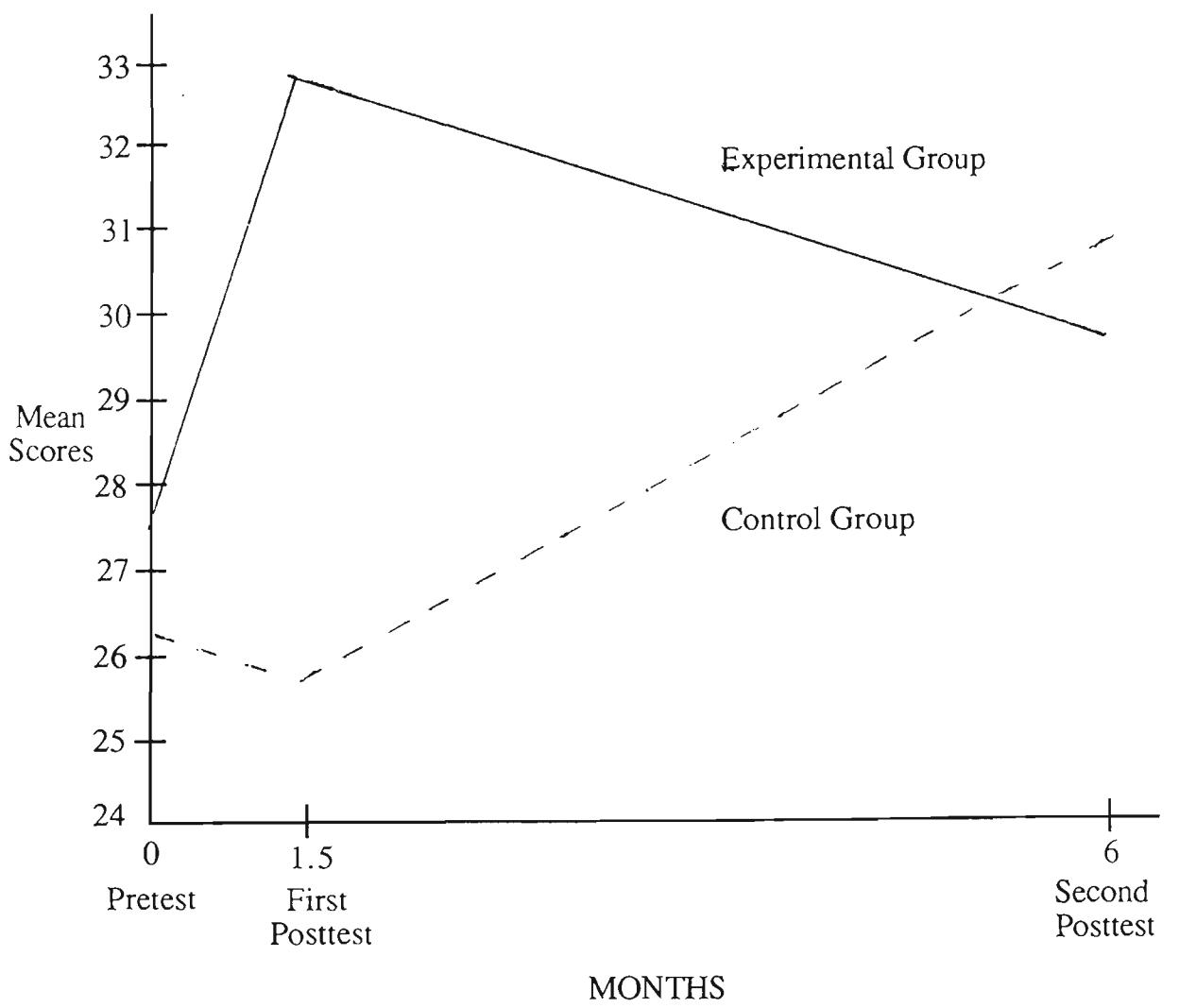
Table 7.36: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Growth) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	29.8	2.73	0.5	0.05	2.01	54	1.58
C	26	31	3.03	0.59				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between experimental and control groups with respect to perceptions of personal growth at second posttest is not significant.

Figure 7.9: Summary of Results for Experimental and Control Groups on Job Satisfaction Profile (Perceptions of Personal Growth) at First and Second Posttest



2.3.1 Discussion on Hypotheses 2.3 and 4.3

Tables 7.35, 7.36 and Figure 7.9 summarise the results of testing hypotheses 2.3 and 4.3 related to experimental and control groups measured on perceptions of personal growth.

It will be remembered that personal growth was defined as the development of the nurse's knowledge, skills and capabilities.

The mean scores of the experimental and control groups show that the experimental group scored higher on perceptions of personal growth. However, once in the clinical area, their perceptions of own growth and development deteriorated to the point of comparability with the control group six months later. The control group, which had similar pretest and first posttest scores, had improved markedly after entering the workforce.

When compared at the first posttest, there was a significant difference between the experimental and control groups with the experimental group nurses perceiving a high level of self-development. Six months later, the difference in scores between the two groups was minor.

This finding suggests that the experimental group nurses felt they had advanced and developed as a result of the experimental curriculum. However, once in the workforce, their knowledge and skills might not have been fully utilised. Consequently they felt they were not developing in the way they had come to expect. The control group, once in the workforce, appear to have derived a good deal more from learning their new roles in the clinical setting.

2.4 Hypotheses 2.4 and 4.4

Hypothesis 2.4

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to attitudes towards challenging work.

The raw data and computation relevant to hypothesis 2.4 is in Appendix D, and summarised in Table 7.37 below.

Table 7.37: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Attitudes Towards Challenging Work) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	32.3	4.09	0.67	0.05	2	67	3.56
C	32	28.6	4.51	0.8				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to attitudes towards challenging work at first posttest is significant.

Hypothesis 4.4

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to attitudes towards challenging work.

The raw data and computation relevant to hypothesis 4.4 is in Appendix D, and summarised in Table 7.38 on the next page.

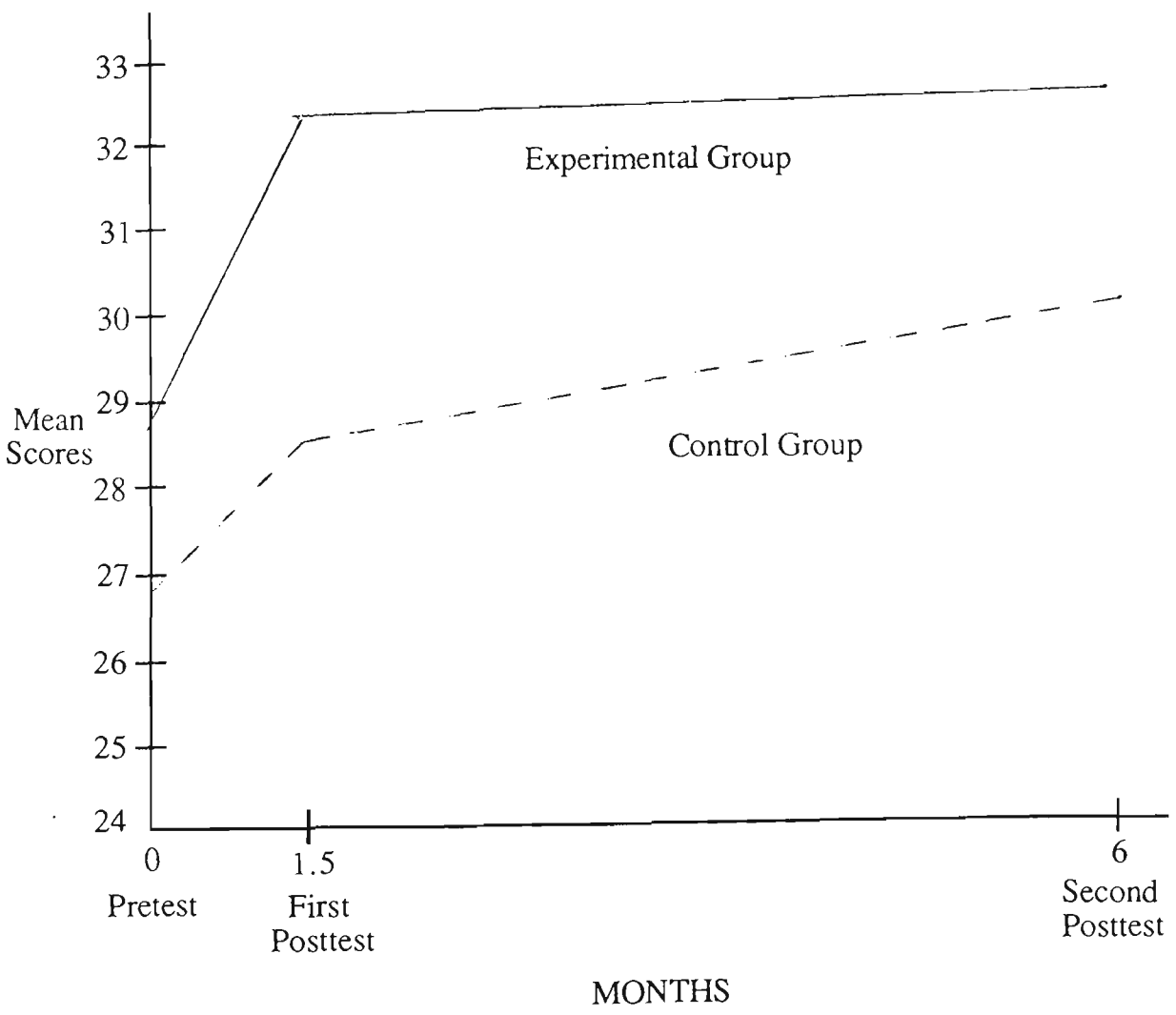
Table 7.38: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Attitudes Towards Challenging Work) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	32.8	3.09	0.56	0.05	2.01	54	2.77
C	26	30.2	4.04	0.79				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to attitudes towards challenging work at second posttest is significant.

Figure 7.10: Summary of Results for Experimental and Control Groups on Job Satisfaction Profile (Attitudes Towards Challenging Work) at First and Second Posttest



2.4.1 Discussion on Hypotheses 2.4 and 4.4

Tables 7.37, 7.38 and Figure 7.10 summarise the results of differences between experimental and control groups measured on attitudes towards challenging work.

If an aim of continuing nursing education programmes is to meet the nurse's professional needs, that aim must incorporate the development of positive attitudes towards difficult tasks and professional duties. When the mean scores are inspected, the experimental group, already slightly (not significantly) more positve than the control group at the pretest, is seen to be more positive to challenging work immediately after the experimental curriculum. These positive attitudes were maintained at a stable rate after they had entered the clinical area. The control group had also developed a positive attitude towards the work both at the first posttest and six months later.

When compared at the first posttest, the experimental group had scored significantly higher than the control group. Contrary to previous criterion measures, the differences remained significant six months later with the experimental group still achieving persistently higher scores.

This result suggests that positive attitudes to work had been developed in the experimental group consequent upon the experimental curriculum. The experimental group nurses perceived they had developed skills and abilities to enable them to handle difficult tasks. Once in the workforce, despite their junior positions, they remained positive though improving at a slower rate when confronted with the reality of being qualified nurses.

The control group nurses, while becoming more positive after pretest, were less positive than their colleagues about challenging work, possibly due to the fact that they might not have possessed the necessary knowledge and skills when confronting difficult situations.

2.5 Hypotheses 2.5 and 4.5

Hypothesis 2.5

There is no significant difference at the end of the experimental curriculum between experimental and control groups with respect to sense of professional responsibility.

The raw data and computation relevant to hypothesis 2.5 is in Appendix D, and summarised in Table 7.39 below.

Table 7.39: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Responsibility) at First Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	37	32.3	3.14	0.52	0.05	2	67	7.64
C	32	25.5	4.15	0.73				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to sense of professional responsibility at first posttest is significant.

Hypothesis 4.5

There is no significant difference six months after the experimental curriculum between experimental and control groups with respect to sense of professional responsibility.

The raw data and computation relevant to hypothesis 4.5 is in Appendix D, and summarised in Table 7.40 on the next page.

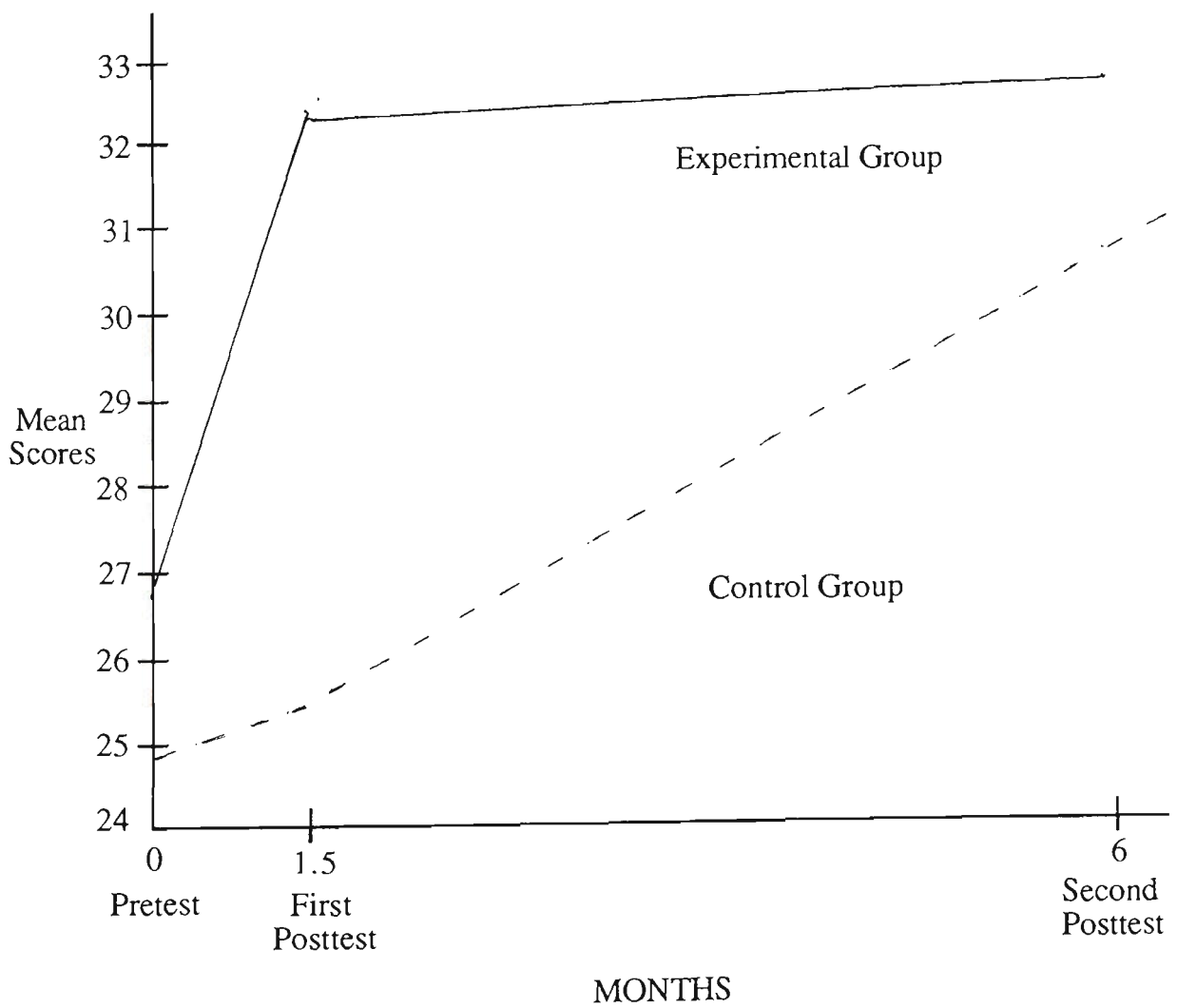
Table 7.40: Analysis of t-test for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Responsibility) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
E	30	32.6	2.75	0.5	0.05	2.01	54	2.26
C	26	30.7	3.62	0.71				

Decision: Since the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between experimental and control groups with respect to sense of professional responsibility at second posttest is significant.

Figure 7.11: Summary of Results for Experimental and Control Groups on Job Satisfaction Profile (Sense of Professional Responsibility) at First and Second Posttest



2.5.1 Discussion on Hypotheses 2.5 and 4.5

Tables 7.39, 7.40 and Figure 7.11 summarise the results of testing hypotheses 2.5 and 4.5 related to experimental and control groups measured on sense of professional responsibility.

Responsibility was considered to be the duty delegated from senior nurses to carry out various nursing tasks. When the scores are inspected, the experimental group is seen to have improved by the end of the experimental curriculum. The positive direction continued, though at a slower rate, six months later. The control group had also improved their sense of professional responsibility since graduation.

When compared at the first posttest, there were significant differences between the experimental and control groups with the experimental group scoring substantially higher. Six months later, the experimental group remained higher in scores and the difference was still signficant, though the gap was narrowing.

The finding suggests that the experimental group had improved their sense of professional responsibility after the experimental curriculum, a trend that continued after they had been in the clinical area for six months. The control group, while developing sense of responsibility, might not have had the same knowledge and skills as the experimental group.

3. Hypotheses Relating to Changes Between Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Hypotheses 5.1 through 5.5 and 7.1 through 7.5

3.1 Hypotheses 5.1 and 7.1

Hypothesis 5.1

There is no significant change from pretest to first posttest between experimental and control groups with respect to awareness of continuing nursing education policy issues.

The raw data and computation relevant to hypothesis 5.1 is in Appendix E, and summarised in Table 7.41 below.

Table 7.41: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Policy Issues) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	30.1	4532.5	4562.6
Sum of squares y	398.9	1049.7	1448.6
Sum of product xy	94.3	1487.7	1582
Degrees of Freedom (unadjusted)	k-1 = 1	N-k = 67	
Adjusted sum of square y	93.6	561.4	
Degrees of Freedom (adjusted)	k-1 = 1	N-k-1 = 66	67
Variance Estimates	93.6	8.5	

$F = 11.1$ ($p < 0.05$)

Unadjusted y means: Experimental group = 30.5
Control group = 25.6

Adjusted y means: Experimental group = 30.52
Control group = 25.68

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to awareness of continuing nursing education policy issues at first posttest is signficant.

Hypothesis 7.1

There is no significant change from first posttest to second posttest between experimental and control groups with respect to awareness of continuing nursing education policy issues.

The raw data and computation relevant to hypothesis 7.1 is in Appendix E, and summarised in Table 7.42 below.

Table 7.42: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Policy Issues) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	275.7	2385.7	2661
Sum of squares y	201.8	43	244.8
Sum of product xy	235.4	245.6	481
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	0.8	17.7	18.5
Degrees of Freedom (adjusted)	1	53	
Variance Estimates	0.8	0.33	

$F = 2.67$ ($p < 0.05$)

Unadjusted y means: Experimental group = 32.1
Control group = 28.3

Adjusted y means: Experimental group = 31.7
Control group = 28.7

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to awareness of continuing nursing education policy issues at second posttest is not signficant.

3.1.1 Discussion on Hypotheses 5.1 and 7.1

Hypotheses 5.1 and 7.1 stated that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups with respect to awareness of continuing nursing education policy issues. Inspection of Table 7.41 shows that there is a signficant change from the pretest to the first posttest. This signficant change suggests that beginning nurse practitioenrs can achieve improved understanding in educational policies if given adequately designed curricula materials, to compensate for their inexperience. This finding negates the general belief of some nurse administrators and educators that beginning nurse practitioners are too inexperienced to understand and interpret the implications of various hospital policy issues.

Table 7.42 shows that no significant change from first posttest to second posttest was found among experimental group nurses six months later. While it may appear on the surface that the experimental curriculum has little direct consequential effect beyond the point of completion, a possible explanation may be that the control group nurses have improved due to their subsequent exposure to hospital inservice and orientation programmes. As a result, difference in change between these two groups is too small to have any significance.

3.2 Hypotheses 5.2 and 7.2

Hypothesis 5.2

There is no significant change from pretest to first posttest between experimental and control groups with respect to awareness of aims of lifelong learning.

The raw data and computation relevant to hypothesis 5.2 is in Appendix E, and summarised in Table 7.43 below.

Table 7.43: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	52	845.7	897.7
Sum of squares y	316.3	1018.3	1334.6
Sum of product xy	112.3	69	181.3
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	73.8	1012.7	1086.5
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	73.8	15.3	

$F = 4.82$ ($p < 0.05$)

Unadjusted y means: Experimental group = 29.9
Control group = 25.6

Adjusted y means: Experimental group = 29.93
Control group = 25.63

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to awareness of aims of lifelong learning at first posttest is signficant.

Hypothesis 7.2

There is no significant change from first posttest to second posttest between experimental and control groups with respect to awareness of aims of lifelong learning.

The raw data and computation relevant to hypothesis 7.2 is in Appendix E, and summarised in Table 7.44 below.

Table 7.44: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	294.1	975.9	1270
Sum of squares y	30.3	545.7	576
Sum of product xy	94.4	323.6	418
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	29.2	438.4	467.6
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	29.2	8.27	

$F = 3.35$ ($p < 0.05$)

Unadjusted y means: Experimental group = 30.7
Control group = 29.2

Adjusted y means: Experimental group = 30
Control group = 29.9

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to awareness of aims of lifelong learning at second posttest is not signficant.

3.2.1 Discussion on Hypotheses 5.2 and 7.2

Hypotheses 5.2 and 7.2 asserted that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups with respect to awareness of aims of lifelong learning.

The analysis of covariance (Table 7.43) shows a significant level of < 0.05 for experimental group in the awareness of aims of lifelong learning. The experimental curriculum seems to make an overwhelming difference to the nurses' learning. Overall, nurses from experimental group showed more favourable change in attitudes than did nurses of control group. The effectiveness of the experimental curriculum as a vehicle for learning was further established. We can assert that, for future curriculum planning, it is essential to include elements that initiate nurses into concepts of lifelong learning activities.

Six months later, the change from first posttest to second posttest is not significant (Table 7.44). In view of the limited time and resources scheduled for the experimental curriculum, one might have expected significant losses on outcome measures due to decay effect. This may have been particularly so in respect of their intervening period in clinical settings. The finding that there was no signficant change produced at all might well demonstrate that the experimental curriculum is having a "holding effect" on nurses' learning.

3.3 Hypotheses 5.3 and 7.3

Hypothesis 5.3

There is no significant change from pretest to first posttest between experimental and control groups with respect to awareness of implementation process.

The raw data and computation relevant to hypothesis 5.3 is in Appendix E, and summarised in Table 7.45 on the next page.

Table 7.45: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Implementation Process) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	6.1	813.2	819.3
Sum of squares y	404.9	2663.7	3068.6
Sum of product xy	32.4	727.1	759.5
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	232.8	2013.8	2246.6
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	232.8	30.5	

$F = 7.63$ ($p < 0.05$)

Unadjusted y means: Experimental group = 28.1
Control group = 25.8

Adjusted y means: Experimental group = 27.96
Control group = 25.94

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to awareness of implementation process at first posttest is signficant.

Hypothesis 7.3

There is no significant change from first posttest to second posttest between experimental and control groups with respect to awareness of implementation process.

The raw data and computation relevant to hypothesis 7.3 is in Appendix E, and summarised in Table 7.46 on the next page.

Table 7.46: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Implementation Process) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	197.9	23.6	221.5
Sum of squares y	33.8	2620.8	2654.6
Sum of product xy	81.8	52.5	134.3
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	164	2504	2668
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	164	49.45	

$F = 3.47$ ($p < 0.05$)

Unadjusted y means: Experimental group = 29.6
Control group = 28.1

Adjusted y means: Experimental group = 28.9
Control group = 28.8

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to awareness of implementation process at second posttest is not signficant.

3.3.1 Discussion on Hypotheses 5.3 and 7.3

Hypotheses 5.3 and 7.3 stated that there was no significant change over time from pretest to first posttest between experimental and control groups with respect to awareness of implementation process.

The analysis of covariance indicates that experimental group nurses changed significantly (Table 7.43). The experimental curriculum does have a bearing on nurses' understanding

of the importance of their active involvement and participation in the teaching and learning process. The change of attitudes of experimental group nurses provides further indications that the career stage based curriculum is effective. It can be suggested that substantial benefits may occur if nurses are actively involved in the planning and provision of continuing nursing education.

Hypotheses 7.3 asserted that there is no significant change from first posttest to second posttest between experimental groups with respect to awareness of implementation process.

Table 7.46 shows that there is no significant change six months later. It would be misleading, however, to suggest that the experimental curriculum has no consequential effect. The fact that experimental group nurses did not regress significantly on implementation processes serves to reinforce the overall point made above that the experimental curriculum has some holding effects beyond its point of completion.

3.4 Hypotheses 5.4 and 7.4

Hypothesis 5.4

There is no significant change from pretest to first posttest between experimental and control groups with respect to awareness of learning climate.

The raw data and computation relevant to hypothesis 5.4 is in Appendix E, and summarised in Table 7.47 on the next page.

Table 7.47: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Learning Climate) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	49	1291.6	1340.6
Sum of squares y	56.9	977.9	1034.8
Sum of product xy	3.7	406.3	410.5
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	56.6	850	906.6
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	56.6	12.88	

$F = 4.39$ ($p < 0.05$)

Unadjusted y means: Experimental group = 27
Control group = 25.2

Adjusted y means: Experimental group = 27
Control group = 25.2

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to awareness of learning climate at first posttest is signficant.

Hypothesis 7.4

There is no significant change from first posttest to second posttest between experimental and control groups with respect to awareness of learning climate.

The raw data and computation relevant to hypothesis 7.4 is in Appendix E, and summarised in Table 7.48 on the next page.

Table 7.48: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Learning Climate) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	137.2	26.7	163.9
Sum of squares y	2.7	329.2	331.9
Sum of product xy	15.5	55.2	70.7
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	0.95	215.1	216.05
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	0.95	4.06	

$F = 0.23$ ($p < 0.05$)

Unadjusted y means: Experimental group = 29.2
Control group = 28.8

Adjusted y means: Experimental group = 29.79
Control group = 29.72

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to awareness of learning climate at second posttest is not signficant.

3.4.1 Discussion on Hypotheses 5.4 and 7.4

Hypotheses 5.4 and 7.4 asserted that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups with respect to awareness of learning climate.

The experimental curriculum did affect the change of attitudes of the experimental group at the end of the first posttest (Table 7.47). Overall, experimental group nurses revealed more positive change to awareness of the learning environment. This may be due to the fact that during the implementation of the curriculum, it was emphasised that "every

situation can be a learning situation" and experimental group nurses were helped to develop skills to capitalise the potential of the learning experience and to utilise resources.

This result suggests that given adequately designed curricula materials, nurses can compensate for their inexperience in nursing situations.

Table 7.48 shows that no significant change from first posttest to second posttest was observed among experimental group nurses six months later. A possible explanation may be that there exists a "learning culture" which is likely to influence all nurses in their first year of graduation. Beginning nurse practitioners would seek opportunity to learn irrespective whether they may attend any continuing education programme. In the clinical areas, this influence is likely to be reinforced at both formal and informal level, via meetings and other professional contacts. As a result, difference in change between the experimental and control group nurses is too small to have any signficance.

3.5 Hypotheses 5.5 and 7.5

Hypothesis 5.5

There is no significant change from pretest to first posttest between experimental and control groups with respect to awareness of individual responsibility.

The raw data and computation relevant to hypothesis 5.5 is in Appendix E, and summarised in Table 7.49 on the next page.

Table 7.49: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Individual Responsibility) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	49.2	6468	6517.2
Sum of squares y	133.2	1714.6	1847.8
Sum of product xy	11.8	414.7	334.5
Degrees of Freedom (unadjusted)	1	67	
Adjusted sum of square y	130.4	1688.7	1818.7
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	130.4	25.6	

$F = 5.09$ ($p < 0.05$)

Unadjusted y means: Experimental group = 27.2
Control group = 24.4

Adjusted y means: Experimental group = 27.1
Control group = 24.5

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to awareness of individual responsibility at first posttest is signficant.

Hypothesis 7.5

There is no significant change from first posttest to second posttest between experimental and control groups with respect to awareness of individual responsibility.

The raw data and computation relevant to hypothesis 7.5 is in Appendix E, and summarised in Table 7.50 on the next page.

Table 7.50: Analysis of Covariance for Experimental and Control Groups Measured on Continuing Nursing Education Awareness Index (Individual Responsibility) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	156.1	25.1	181.2
Sum of squares y	1.5	180.5	182
Sum of product xy	15	50.8	65.8
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	0.1	77.7	77.8
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	0.1	1.46	

$F = 0.07$ ($p < 0.05$)

Unadjusted y means: Experimental group = 30.7
Control group = 30.3

Adjusted y means: Experimental group = 30.2
Control group = 30.8

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to awareness of individual responsibility at second posttest is not signficant.

3.5.1 Discussion on Hypotheses 5.5 and 7.5

Hypotheses 5.5 and 7.5 stated that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups with respect to awareness of individual responsibility.

Inspection of Table 7.49 shows that there is a significant change from the pretest to the first posttest. The analysis of covariance shows a significant level of < 0.05 for experimental group and control group in the awareness of individual responsibility.

Again the experimental curriculum seems to make an overwhelming difference to nurses' learning. This significant finding, therefore, reveals that any continuing nursing curriculum should assist an individual to become an active learner. The change in attitudes of experimental group nurses further establishes the efficacy of the career stage based curriculum.

Six months later, there was no significant change in respect of awareness of personal responsibility among experimental group nurses (Table 7.50). One would imagine that in the clinical areas, other staff would influence the educational beliefs (and subsequent practices) of the experimental group nurses. This may be particularly so since other staff will no doubt occupy positions of seniority in hospitals and lend themselves to the transmission of hospital based values. The fact that experimental group nurses' attitudes did not significantly change over time serves to reinforce the point made in previous discussion that they are more steadily inclined towards aspects related to continuing nursing education.

4. Hypotheses Relating to Changes Between Experimental and Control Groups Measured on Job Satisfaction Profile (Hypotheses 6.1 through 6.5 and 8.1 through 8.5

4.1 Hypotheses 6.1 and 8.1

Hypothesis 6.1

There is no significant change from pretest to first posttest between experimental and control groups with respect to perceptions of personal achievement.

The raw data and computation relevant to hypothesis 6.1 is in Appendix E, and summarised in Table 7.51 below.

Table 7.51: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Achievement) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	34.2	1272.6	1306.8
Sum of squares y	203.6	3235.4	3439.8
Sum of product xy	51.1	1540.9	1592.7
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	88.5	1369.2	1457.7
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	88.5	20.7	

$F = 4.27$ ($p < 0.05$)

Unadjusted y means: Experimental group = 31.4
Control group = 27.9

Adjusted y means: Experimental group = 31.2
Control group = 28.1

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to perceptions of personal achievment at first posttest is signficant.

Hypothesis 8.1

There is no significant change from first posttest to second posttest between experimental and control groups with respect to perceptions of personal achievement.

The raw data and computation relevant to hypothesis 8.1 is in Appendix E, and summarised in Table 7.52 below.

Table 7.52: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Achievement) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	1289.3	2187.6	3476.4
Sum of squares y	5744.2	3357.5	9101.7
Sum of product xy	2679.4	1055	3734.4
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	175.9	2898.7	3024.6
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	175.9	53.8	

$F = 3.27$ ($p < 0.05$)

Unadjusted y means: Experimental group = 33
Control group = 32.3

Adjusted y means: Experimental group = 31.37
Control group = 33.92

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to perceptions of personal achievement at second posttest is not signficant.

4.1.1 Discussion on Hypotheses 6.1 and 8.1

Hypotheses 6.1 and 8.1 asserted that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups with respect to perceptions of personal achievement.

The analysis of data indicates that there was a significant change in the scores of the experimental group nurses at the first posttest (Table 7.51). The experimental curriculum attended by nurses does have a bearing on their perceptions of achievement. It is obvious that experimental group nurses considered the completion of the experimental curriculum as an important accomplishment. Given the relatively few motivators available in nursing, it appears that the career stage-based curriculum could be used to aid nurses' sense of achievement.

When examined again six months later, the change at the second posttest was no longer significant (Table 7.52). It would be misleading to suggest that the experimental curriculum made no impact beyond the point of completion. It can be argued that the experimental curriculum facilitates certain nurses' beliefs and actions which may lead to improved sense of achievement. However, the curriculum itself may do nothing more than facilitate belief and actions. In the long term, no curriculum can work independently of the support of other staff in the clinical areas. It is likely that experimental group nurses' perceptions may be influenced by other staff who occupy positions of seniority and who transmit their own values on learning. While some of those values are positive, others may be negative and they tend to counteract each other. As a result, the difference in change is too small to be significant.

4.2 Hypotheses 6.2 and 8.2

Hypothesis 6.2

There is no significant change from pretest to first posttest between experimental and control groups with respect to sense of professional recognition.

The raw data and computation relevant to hypothesis 6.2 is in Appendix E, and summarised in Table 7.53 below.

Table 7.53: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Recognition) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	78.4	1291.2	1369.6
Sum of squares y	326.8	173.2	500.8
Sum of product xy	160	464.2	624.2
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	0.3	6.4	6.7
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	0.3	0.1	

$F = 3$ ($p < 0.05$)

Unadjusted y means: Experimental group = 31.3
Control group = 26.9

Adjusted y means: Experimental group = 30.8
Control group = 27.4

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to sense of professional recognition at first posttest is not signficant.

Hypothesis 8.2

There is no significant change from first posttest to second posttest between experimental and control groups with respect to sense of professional recognition.

The raw data and computation relevant to hypothesis 8.2 is in Appendix E, and summarised in Table 7.54 below.

Table 7.54: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Recognition) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	278.2	1248.9	1527.1
Sum of squares y	2.3	60.3	62.6
Sum of product xy	8.1	94.5	102.6
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	2.06	53.15	55.21
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	2.06	1.04	

$F = 1.98$ ($p < 0.05$)

Unadjusted y means: Experimental group = 30.4
Control group = 30.3

Adjusted y means: Experimental group = 30.25
Control group = 30.45

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to sense of professional recognition at second posttest is not signficant.

4.2.1 Discussion on Hypotheses 6.2 and 8.2

Hypotheses 6.2 and 8.2 stated that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups with respect to sense of professional recognition.

No significant changes in respect of sense of recognition were found among experimental group nurses at the first and second posttests (Tables 7.53 and 7.54). It is surprising to note that the experimental curriculum did not aid nurses' sense of recognition. It may be that change between pretest and first posttest is too small to have any impact on the perceptions of experimental group nurses. Further, for the experimental group, the effect of the curriculum may well diminish in the light of ongoing clinical experience during the first six months. Either way the type of curriculum which nurses undergo does not appear to change nurses' sense of recognition.

4.3 Hypotheses 6.3 and 8.3

Hypothesis 6.3

There is no significant change from pretest to first posttest between experimental and control groups with respect to perceptions of personal growth.

The raw data and computation relevant to hypothesis 6.3 is in Appendix E, and summarised in Table 7.55 on the next page.

Table 7.55: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Growth) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	41.2	82.1	123.3
Sum of squares y	908.7	547.9	1456.6
Sum of product xy	187.8	42.3	230.1
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	69.4	526.1	595.5
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	69.4	7.97	

$F = 8.65$ ($p < 0.05$)

Unadjusted y means: Experimental group = 33
Control group = 25.9

Adjusted y means: Experimental group = 32.24
Control group = 26.3

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to perceptions of personal growth at first posttest is signficant.

Hypothesis 8.3

There is no significant change from first posttest to second posttest between experimental and control groups with respect to perceptions of personal growth.

The raw data and computation relevant to hypothesis 8.3 is in Appendix E, and summarised in Table 7.56 on the next page.

Table 7.56: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Perceptions of Personal Growth) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	904.5	27.6	932.1
Sum of squares y	123.9	318.5	442.4
Sum of product xy	314.2	56.5	370.7
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	14.8	202.8	217.6
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	14.8	3.82	

$F = 3.87$ ($p < 0.05$)

Unadjusted y means: Experimental group = 29.8
Control group = 31

Adjusted y means: Experimental group = 26.96
Control group = 32.42

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to perceptions of personal growth at second posttest is not signficant.

4.3.1 Discussion on Hypotheses 6.3 and 8.3

Hypotheses 6.3 and 8.3 stated that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups with respect to perceptions of personal growth.

Inspection of Table 7.55 shows that there is a significant change from the pretest to first posttest. Although growth is seen as an appropriate process in the nurse's professional life, it would be unrealistic to suggest that such growth and development will occur all of

the time. This result suggests that nurses can achieve personal growth if given well designed curricula. It can be argued that the experimental curriculum facilitates certain nurses' beliefs and actions which may lead to significant nurses gains on growth. Therefore, the efficacy of the experimental curriculum as a potential means to motivate nurses is tentatively demonstrated.

Table 7.56 shows that no significant change in second posttest was found among experimental group nurses six months later. It can be suggested that the experimental curriculum has no effect on nurses once they enter clinical areas. The researcher has reservations about this line of argument. This result may be due to some kind of "ceiling" on personal growth that is approached by virtually all nurses in their first year of graduation, probably capable of being reached through clinical experience, but approached more quickly with consequential advantages to nurses with the stimulus of an effective career stage-oriented curriculum.

4.4 Hypotheses 6.4 and 8.4

Hypothesis 6.4

There is no significant change from pretest to first posttest between experimental and control groups with respect to attitudes towards challenging work.

The raw data and computation relevant to hypothesis 6.4 is in Appendix E, and summarised in Table 7.57 on the next page.

Table 7.57: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Attitudes towards Challenging Work) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	76.8	70.3	147.1
Sum of squares y	239.4	1398.6	1629
Sum of product xy	135.6	255	390.6
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	2.1	464.7	466.8
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	2.1	7	

$F = 0.3$ ($p < 0.05$)

Unadjusted y means: Experimental group = 32.3
Control group = 28.6

Adjusted y means: Experimental group = 31.9
Control group = 28.99

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to attitudes towards challenging work at first posttest is not signficant.

Hypothesis 8.4

There is no significant change from first posttest to second posttest between experimental and control groups with respect to attitudes towards challenging work.

The raw data and computation relevant to hypothesis 8.4 is in Appendix E, and summarised in Table 7.58 on the next page.

Table 7.58: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Attitudes twoards Challenging Work) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	383.7	84.1	467.8
Sum of squares y	152.7	448	600.7
Sum of product xy	219.8	45.5	265.3
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	26.8	423.4	450.2
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	26.8	7.98	

$F = 3.36$ ($p < 0.05$)

Unadjusted y means: Experimental group = 32.8
Control group = 30.2

Adjusted y means: Experimental group = 31.75
Control group = 31.25

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to attitudes towards challenging work at second posttest is not signficant.

4.4.1 Discussion on Hypotheses 6.4 and 8.4

Hypotheses 6.4 and 8.4 asserted that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups measured in attitudes towards challenging work.

The analysis of covariance indicates that experimental group nurses did not change significantly at the first posttest (Table 7.57) and the second posttest six months later (Table 7.58). These findings might be interpreted to indicate that a nurse need have no

previous preparation in facing challenging work. Again, the researcher has reservations about this line of argument. One explanation for this finding could be that the experimental curriculum was designed with the beginning nurse practitioner's career stage needs in mind rather than preparing them to cope with tasks and situations beyond their level of competency. Thus, these nurses may not be fully receptive when challenged by work at a more complex level.

4.5 Hypotheses 6.5 and 8.5

Hypothesis 6.5

There is no significant change from pretest to first posttest between experimental and control groups with respect to sense of professional responsibility.

The raw data and computation relevant to hypothesis 6.5 is in Appendix E, and summarised in Table 7.59 below.

Table 7.59: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Responsibility) at First Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	91.3	1771	1862.3
Sum of squares y	837.5	423.3	1260.8
Sum of product xy	268	392.1	660.1
Degrees of Freedom (unadjusted)	1	67	68
Adjusted sum of square y	50.8	336.5	387.3
Degrees of Freedom (adjusted)	1	66	67
Variance Estimates	50.8	5.1	

$F = 9.98$ ($p < 0.05$)

Unadjusted y means: Experimental group = 32.3
Control group = 25.5

Adjusted y means: Experimental group = 31.9
Control group = 25.6

Decision: Because the tabled value of F is smaller than the absolute value of F test statistic, reject null hypothesis.

Changes between experimental and control groups with respect to sense of professional responsibility at first posttest is signficant.

Hypothesis 8.5

There is no significant change from first posttest to second posttest between experimental and control groups with respect to sense of professional responsibility.

The raw data and computation relevant to hypothesis 8.5 is in Appendix E, and summarised in Table 7.60 below.

Table 7.60: Analysis of Covariance for Experimental and Control Groups Measured on Job Satisfaction Profile (Sense of Professional Responsibility) at Second Posttest

	Source of Variation		
	Between	Within	Total
Sum of squares x	699	134	833
Sum of squares y	56.4	128.6	185
Sum of product xy	197.2	62.3	259.5
Degrees of Freedom (unadjusted)	1	54	55
Adjusted sum of square y	0.8	99.7	100.5
Degrees of Freedom (adjusted)	1	53	54
Variance Estimates	0.8	1.88	

$F = 0.43$ ($p < 0.05$)

Unadjusted y means: Experimental group = 32.6
Control group = 30.7

Adjusted y means: Experimental group = 31.55
Control group = 31.75

Decision: Because the tabled value of F is larger than the absolute value of F test statistic, accept null hypothesis.

Changes between experimental and control groups with respect to sense of professional responsibility at second posttest is not signficant.

4.5.1 Discussion on Hypotheses 6.5 and 8.5

Hypotheses 6.5 and 8.5 stated that there was no significant change over time from pretest to first posttest and from first posttest to second posttest between experimental and control groups measured on sense of professional responsibility.

The experimental curriculum did affect the change of attitudes of the experimental group at the end of first posttest (Table 7.59). Nurses who had received the experimental curriculum showed greater understanding of their professional responsibility. An explanation could be that this group of nurses is better informed on the legal and ethical issues of nursing. This result suggests that the career stage base curriculum could be used to reinforce nurses' sense of responsibility.

Table 7.60 shows that six months later, the experimental curriculum produced no significant change on nurses' sense of professional responsibility. In view of junior positioning of the beginning nursing practitioners, one might have expected significant losses on this outcome; particularly as beginning nurse practitioners are often seen as inadequate, ill-prepared and unable to cope with responsibilities. Most writers point to the lack of confidence of nurses, particularly immediately after graduation. However, the finding that there was no significant change produced at all, might well serve to reinforce the previous discussion that the experimental curriculum has some "holding" effects.

5. Hypotheses Relating to Differences between Central and Peripheral Hospital Groups Measured on Continuing Nursing Education Awareness Index (Hypotheses 9.1 through 9.5)

5.1 Hypothesis 9.1

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to awareness of continuing nursing education policy issues.

The raw data and computation relevant to hypothesis 9.1 is in Appendix F, and summarised in Table 7.61 below.

Table 7.61: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Continuing Nursing Education Awareness Index (Policy Issues) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	29.2	3.79	0.81	0.05	2.01	52	3
P	32	32.6	4.56	0.8				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between central and peripheral hospital groups with respect to awareness of continuing nursing education policy issues at second posttest is significant.

5.1.1 Discussion on Hypothesis 9.1

Table 7.61 summarises the differences between the central and peripheral hospitals (or large metropolitan and small non-metropolitan hospitals) measured on awareness of continuing nursing education policy issues at the second posttest.

The analysis of the data indicates that the size and location of the hospitals were discriminating variables in the awareness of continuing nursing education policies.

Nurses from peripheral hospitals achieved higher scores than their counterparts at the central hospitals. This difference in scores is statistically signficant. Nurses from peripheral hospitals appear to be better informed about nurse education policy issues.

5.2 Hypothesis 9.2

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to awareness of aims of lifelong learning.

The raw data and computation relevant to hypothesis 9.2 is in Appendix F, and summarised in Table 7.62 below.

Table 7.62: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	28.8	2.87	0.61	0.05	2.01	52	1.13
P	32	29.6	2.58	0.46				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to awareness of aims of lifelong learning at second posttest is not significant.

5.2.1 Discussion on Hypothesis 9.2

Table 7.62 summarises the differences between the central and peripheral hospitals measured on awareness of aims of lifelong learning at the second posttest.

The data indicates that whether a hospital is central or peripheral in location, large or small in size is not an important factor in nurses' attitudes towards the aims of lifelong

learnig. Again it is the case that a non-significant difference scores nevertheless lay in the direction of the peripheral hospitals. Given that a similar result occurred over awareness of policy, it may be that some mild trend exists that runs counter to expectations based on the greater availability of educational resources in the central hospitals.

5.3 Hypothesis 9.3

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to awareness of implementation process.

The raw data and computation relevant to hypothesis 9.3 is in Appendix F, and summarised in Table 7.63 below.

Table 7.63: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Continuing Nursing Education Awareness Index (Implementation Process) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	32.1	3.19	0.68	0.05	2.01	52	1.64
P	32	30.7	3.23	0.57				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to awareness of implementation process at second posttest is not significant.

5.3.1 Discussion on Hypothesis 9.3

Table 7.63 summarises the differences between the central and peripheral hospitals measured on awareness of implementation process at the second posttest.

The analysis of the data shows that the size and location of the hospitals had no bearing on nurses' awareness of implementation process. The central hospitals rendered higher mean scores, but without statistical significance. The non-significant difference occurs despite the fact that central hospitals are more inclined to utilise inservice programmes, ostensibly making their nurses more familiar with programme designs and methods. Are these programmes, expensive though they may be, providing value for money?

5.4 Hypothesis 9.4

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to awareness of learning climate.

The raw data and computation relevant to hypothesis 9.4 is in Appendix F, and summarised in Table 7.64 below.

Table 7.64: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Continuing Nursing Education Awareness Index (Learning Climate) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	29.6	3.74	0.8	0.05	2.01	52	1.43
P	32	30.7	2.71	0.39				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to awareness of learning climate at second posttest is significant.

5.4.1 Discussion on Hypothesis 9.4

Hypothesis 9.4 asserts that there was no significant difference between the central and peripheral hospitals measured on awareness of learning climate at the second posttest.

Analysis of data (Table 7.64) indicates that there was no significant difference in the scores of nurses whether they were from central or peripheral hospitals, although nurses from small peripheral hospitals achieved slightly higher scores. Awareness of learning climate probably depends upon many factors, of which size and location of hospital are not important.

5.5 Hypothesis 9.5

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to awareness of individual responsibility.

The raw data and computation relevant to hypothesis 9.5 is in Appendix F, and summarised in Table 7.65 below.

Table 7.65: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Continuing Nursing Education Awareness Index (Individual Responsibility) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	30.3	2.15	0.46	0.05	2.01	52	1.51
P	32	29.2	3.11	0.55				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to awareness of individual responsibility at second posttest is not significant.

5.5.1 Discussion on Hypothesis 9.5

Table 7.65 summarises the result of differences between the central and peripheral hospitals measured on awareness of individual responsibility at the second posttest.

Nurses' scores on this awareness index were not significantly different, irrespective of whether they were from central or peripheral hospitals, although nurses from central hospitals achieved slightly higher scores. Recognising that the trend for higher scores in the direction of large central hospitals is hypothesised to represent a different achievement by chance, it is possible that the level of clinical support and wide variety of patient conditions in the central hospitals bring some slight influence to bear.

6. Hypotheses Relating to Differences between Central and Peripheral Hospital Groups Measured on Job Satisfaction Profile (Hypotheses 10.1 through 10.5)

6.1 Hypothesis 10.1

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to perceptions of personal achievement.

The raw data and computation relevant to hypothesis 10.1 is in Appendix G, and summarised in Table 7.66 below.

Table 7.66: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Job Satisfaction Profile (Perceptions of Personal Achievement) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	30.6	4.06	0.87	0.05	2.01	52	0.9
P	32	30.4	2.91	0.51				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to perceptions of personal achievement at second posttest is not significant.

6.1.1 Discussion on Hypothesis 10.1

Table 7.66 summarises the differences between the central and peripheral hospitals measured on perceptions personal achievement at the second posttest.

The data shows that nurses did not differ in perceptions of personal achievement according to whether they were from central or peripheral hospitals. Size and location of hospitals are not discriminating variables. We can suggest, from the whole of the

evidence available, that it is the micro-organisational factors (such as the finely tuned interpersonal relationships) rather than the macro-organisational factors (such as geography and scale of enterprise) that are the determining features of sense of work and personal achievement among nurses in hospital settings.

6.2 Hypothesis 10.2

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to sense of professional recognition. The raw data and computation relevant to hypothesis 10.2 is in Appendix G, and summarised in Table 7.67 below.

Table 7.67: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Job Satisfaction Profile (Sense of Professional Recognition) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	30.2	4.34	0.93	0.05	2.01	52	2.95
P	32	33	2.97	0.52				

Decision: Because the tabled value of t is smaller than the absolute value of t-test statistic, reject null hypothesis.

Difference between central and peripheral hospital groups with respect to sense of professional recognition at second posttest is significant.

6.2.1 Discussion on Hypothesis 10.2

Table 7.67 summarises the result of differences between the central and peripheral hospitals measured on sense of professional recognition at the second posttest.

That both the size and location of the hospitals had significant influence in nurses' sense of professional recognition is obvious. Bearing in mind that interpersonal relationships

in central hospitals tend to be more formal and hierarchical in strucutre, and that staff have closer working relationships in peripheral hospitals, it may well be that nurses from peripheral hospitals perceived they were better recognised, praised and appreciated for their work than those in large and central hospitals. The intriguing question, to be discussed later, is why differences in sense of professional recognition reflect macro-organisational features while other job satisfaction characteristics do not.

6.3 Hypothesis 10.3

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to perceptions of personal growth.

The raw data and computation relevant to hypothesis 10.3 is in Appendix G, and summarised in Table 7.68 below.

Table 7.68: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Job Satisfaction Profile (Perceptions of Personal Growth) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	32.3	3.33	0.71	0.05	2.01	52	0.38
P	32	32.6	2.67	0.47				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to perceptions of personal growth at second posttest is not significant.

6.3.1 Discussion on Hypothesis 10.3

Table 7.68 summarises the result of testing hypothesis 10.3 concerning the differences between the central and peripheral hospitals measured on perceptions personal growth at

the second posttest.

The analysis of the data indicates that there is no significant difference in the scores of nurses from central and peripheral hosptials as will be shown in the case studies. The key to personal development in knowledge, skills and capabilities for most beginning nurses is the clinical environment and the relationships established with immediate supervising staff.

6.4 Hypothesis 10.4

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to attitudes towards challenging work.

The raw data and computation relevant to hypothesis 10.4 is in Appendix G, and summarised in Table 7.69 below.

Table 7.69: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Job Satisfaction Profile (Attitudes towards Challenging Work) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	30.3	3.66	0.78	0.05	2.01	52	0.12
P	32	30.4	2.88	0.51				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to attitudes towards challenging work at second posttest is not significant.

6.4.1 Discussion on Hypothesis 10.4

Table 7.69 summarises the result of differences between the central and peripheral hospitals measured on attitudes towards challenging work at the second posttest.

The analysis of the data indicates that there was no significant difference on nurses' attitudes irrespective of whether they were from central or peripheral hospitals. A possible explanation is that there were compensating factors at play which traded off and led to the above mean scores. In large central hospitals, there were more major medical/surgical cases with the apparent disadvantage of complicated nursing tasks and duties. In small, peripheral hospitals, nurses tend to be more widely involved, with the possible disadvantage of spreading themselves to cover everything.

6.5 Hypothesis 10.5

There is no significant difference six months after the experimental curriculum between central and peripheral hospital groups with respect to sense of professional responsibility.

The raw data and computation relevant to hypothesis 10.5 is in Appendix G, and summarised in Table 7.70 below.

Table 7.70: Analysis of t-test for Central and Peripheral Hospital Groups Measured on Job Satisfaction Profile (Sense of Professional Responsibility) at Second Posttest

Group	N	Mean	S.D.	S.E.	P set	T-value required	d.f.	T-value obtained
C	22	31	4.25	0.91	0.05	2.01	52	1.32
P	32	29.8	2.78	0.49				

Decision: Because the tabled value of t is larger than the absolute value of t-test statistic, accept null hypothesis.

Difference between central and peripheral hospital groups with respect to sense of

professional responsibility at second posttest is not significant.

6.5.1 Discussion on Hypothesis 10.5

Table 7.66 summarises the result of differences between the central and peripheral hospitals measured on sense of professional responsibility at the second posttest.

Again, the size and location of the hospitals does not have a bearing on nurses' sense of professional responsibility is obvious. Although nurses from large and central hospitals scored higher, there was no significant difference, indicating that any differences was likely due to chance factors. Bearing in mind that the beginning nurse practitioners were very junior, the responsibility delegated from above would be limited irrespective of where they might be working.

7. Summary

This chapter has presented the analysis of data from the time of implementation of the experimental curriculum. In the first place, it compared the experimental and control groups at the end of the experiment and six months later in relation to the criterion measures. Secondly, it analysed the relative changes over time in the experimental and control groups between the pretest and first posttest and the second posttest six months later. Thirdly, it analysed the two main environmental influences, namely, size and location of the hospitals, after the beginning nurse practitioners had been in the workforce for six months.

The findings reveal that there were significant differences between the experimental and control groups immediately after the experiment on a wide range of criteria. Under all criterion measures, the experimental group was shown to hold more positive attitudes in continuing nursing education and job satisfaction. However, it was also shown that six months later, while the experimental group remained positive in some dimensions, the differences were no longer signficant in many situations due to improvement of the control group.

Over time, the experimental curriculum had significant effects on continuing nursing education and partial effects on job satisfaction issues immediately after the experiment. Six months later, the signficance disappeared. This finding does not necessarily mean that the experimental group worsened. It may simply mean that there is some kind of "ceiling" on nurses' achievement of educational and job satisfaction in their first year of employment. That there may be two routes to achieve this "ceiling". The first route is to leave nurses alone to experience on the job. The second approach is to provide a well structured nursing curriculum in which nurses will achieve faster (with consequential advantages to the organisation).

Size and location of hospitals had no significant influence on nurses' attitudes towards continuing education and job satisfaction except on awareness of policy issues and sense of professional recognition.

The analysis has revealed that the career stage focused curriculum, while having immediate impact on nurses' learning and job satisfaction, also has some medium term "holding" effect once the nurses enter the clinical areas. It is necessary to explore, therefore, what is happening in the clinical areas which may change the nurses' attitudes.

CHAPTER EIGHT

CASE STUDY (PART 1) OF LEARNING MILIEUX: THE MODIFYING EFFECT OF THE WORKPLACE

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CASE STUDY (PART 1) OF LEARNING MILIEUX: THE MODIFYING EFFECT OF THE WORKPLACE

1. Introduction

In the previous section, a quasi-experimental approach was used to assess certain effects of the experimental curriculum. The focus of analysis was the beginning nurse practitioners. The present chapter, by using case study methods, examines the hospital learning milieux for complementary or other influences following the continuing education programme; that is, with the beginning nurse practitioners established in the clinical areas.

In this study, the learning milieu is defined as the social-psychological and physical environment to which the beginning nurse practitioners are exposed in the clinical areas. The milieu represents a network and nexus of cultural, social, institutional and psychological variables. These interact in complicated ways to produce, in each clinical setting, a unique pattern of circumstances which suffuse teaching and learning. The configuration of the learning milieu depends on the interplay of many factors; some known, some unrecognised, some intended, some unintended. For instance, there are the constraints on the teaching resources in a clinical setting; there are pervasive operating assumptions of continuing education held by institutions; there are the individual supervisor characteristics; and there are the nurse's own perceptions and preoccupations.

The introduction of an innovative curriculum prior to clinical appointment can set off a chain of activities once the beginning nurse practitioners enter the workforce. In turn, these consequences are likely to affect the innovation subsequently, changing its form and moderating its impact. As well as acquiring particular habits of learning, beginning

nurse practitioners may also assimilate the conventions, beliefs and models of hospital reality. To gauge the change of nurses' learning behaviour, one needs to trace how each of the milieux influences a given nurse's commitment to life-long learning.

2. Case Study - A Definition

Case study is the examination of an instance in action. The study of particular incidents and events, along with the selective collection of information on biodata, personalities, intentions and values, allows the researcher to capture and portray those elements of a situation that give it meaning.

The case study approach has the unique quality of being an open system approach. This provides an opportunity to reformulate the problem and revise the design as the research is being conducted. By being non-standardised, the inquiry can more readily be directed on the basis of the data to more fruitful areas of investigation. In addition, the case study approach allows the establishment of relationships between the observed and the researcher to elicit valuable information. This information can be incorporated into development of formative evaluation. The more direct relationships with daily experience means that extraneous questions and irrelevant materials can also be avoided. Each method of data collection within the case study approach is helpful to gain access to various types of information.

In the past, case study methods have generally been utilised and developed where there has been a clear need to confront the idiosyncrasy of individual instances, or where there has been no clear vision of an appropriate theoretical base from which to operate. At times, they have also been used for the wrong reasons; for instance, to supplement inadequate and poorly conducted quantitative work. However, in this research the case study is being used as exploration and to follow up issues arising from the quantitative data and where quantitative data cannot probe. Many of the quite legitimate questions

cannot be totally answered by numerical analyses. Such questions are directed at the experience of the beginning nurse practitioners after the experiment and at the nature and variety of transactions which characterise the hospital learning milieu. There is a need to portray both the experience and the milieu, so that prospective readers can relate them to their own experiences, circumstances and concerns, often more so than to the results of the quantitative methods. The case study gives insight into specific instances, events or situations and enables manageable facets of human activity to be held down and examined. It provides an opportunity for obtaining data from various appropriate sources. It is especially useful when the observed individual(s) cannot communicate data directly. Interviewing informants allows the researcher to obtain data which is not readily available from direct observation, as well as tapping values and experiences. Document analysis allows for gathering of objective information in other spheres of the organization and provides the opportunity for the surfacing of important phenomena. Hence, with case study methods, much thought is given to the human relations aspects to enable opportunities for new and different information to be optimised.

3. Reliability and Validity

The reliability and validity of any research method are major criteria for assessing its quality and adequacy. In relation to case studies, one of the problems is that case studies are inevitably and always partial accounts involving selection at every stage, from choosing the cases for study, to sampling events and instances and to editing and presenting materials. Because educational case studies are almost always conducted under severe constraints of time and resources, reliability and validity can be threatened.

Essentially, the reliability of an instrument is often seen as the degree of consistency with which it measures the attribute it is supposed to be measuring. This can be especially difficult to achieve in the case study where the variables that account for the interactive nature of human activities are included. However, simply to ignore them because they are

difficult to grasp can damage the research.

One aspect of reliability that often dominates discussion of case study research is the problem of replicability. Would another researcher entering the same situation produce similar results? The researcher can only suggest that in emphasising research methods and systematic procedures rather than personal intuition, one is moving to a kind of case study research that has high reliability in this sense. Educational situations may only rarely be replicable in detail. However, at the level of implementing principles or widening trends or patterns of (or triggers for) behaviour, they may be highly replicable.

Validity takes one to the interface between the findings of the study and the reality from which they were extracted. If we can re-work the accepted notion of validity, we can redefine validity in terms of accuracy. An instrument can be said to be valid if its measures accurately reflect the attribute under investigation. Hence in the case study, one can focus validity towards the degree of fit between construct and data. The critical point is that validity is concerned with the relation between events and representations. In the case study, therefore, the emphasis is towards collecting and presenting information and constructs in a manner that is free from ambiguity. Given high validity, it should be routine for other researchers and audiences to reach similar interpretations from the presented events.

Validity is essentially about truth conditions. The findings the educational researcher brings are generally one of two kinds. He may enter the system in order to seek truth through explanation, or alternatively he may enter it to seek truth through the portrayal of reality. The case study findings should give the reader the feeling of vicarious experience. Hence, case study has at least face validity - the judgement that the results seem to fit the reality. In the case study, this validity is of much greater significance, for the case study worker is critically concerned to capture and portray the world as it appears to the people in it. For the case study worker, the internal judgements made by those he

studies, or who are close to the situation, are often more significant than the judgements of outsiders.

4. The Research Strategies

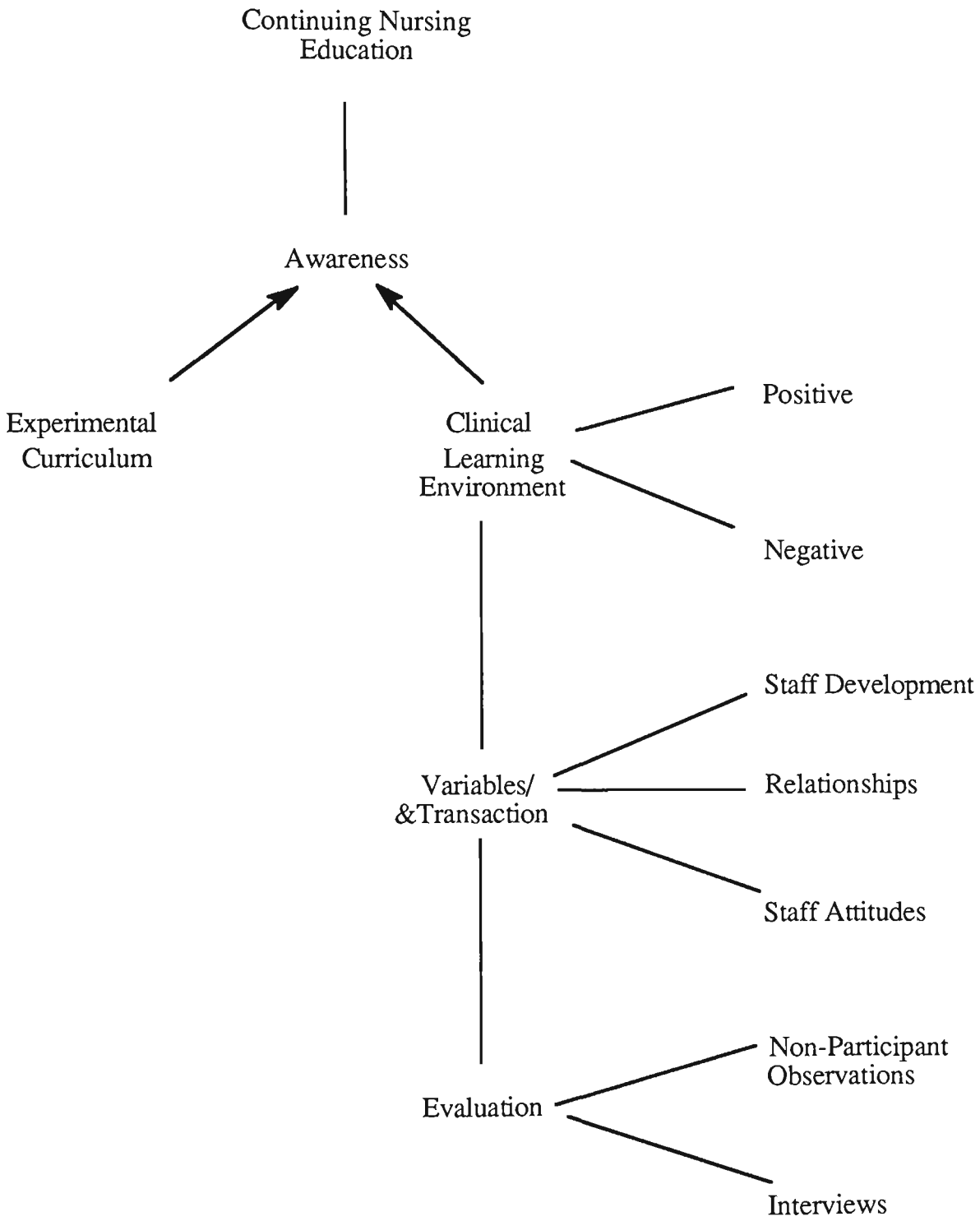
In identifying the environmental factors likely to support and increase the beginning nurse practitioner's commitment to continuing education, a methodology is needed that would serve two purposes. Firstly, it would provide systematic procedures for gathering data on the hospital environment and its culture. Secondly, it would provide information useful for evaluating nurses' interests, learning strategies and particular elements in their learning environment.

To accomplish these purposes, the methodology should provide a comfortable face-to-face relationship between the nurse and the researcher. It should allow a choice of techniques and procedures for the collection of useful information. It should permit an ongoing analysis of the environmental factors and be as culturally unbiased as possible. In a face-to-face relationship, the researcher can gain a more thorough understanding and a better sense of knowing the nurse. An awareness of her world can be gathered. The nurse's interests and values provide a pivotal point guiding the collection of data and the interpretation of the social setting. Techniques such as observation and interviewing often provide crucial data about the otherwise intangible affective experiences of the beginning nurse and how, as a practitioner she reacts to various environmental factors.

Diagrammatically, the case study approach is presented on the next page (Figure 8.1). The flow chart identifies the essential part of the follow-up design. The decision towards continuing education is influenced by the beginning nurse practitioner's awareness of the need to learn. The awareness forms an "umbrella" and determines the degree of commitment towards life long learning. The place of the continuing education curriculum in this awareness is further influenced by her experience within the clinical area. The

learning milieux can reinforce her awareness by providing meaningful experience. Alternatively, it may be negative, and consequently minimising her interest to learn. Focusing on the clinical area will reveal characteristics in the learning milieux that can be studied systematically. These variables interconnect and involve transactions, covering strategies of staff development, the relationships among staff and staff attitudes towards change, likely to modify the effect of an experimental curriculum.

Figure 8.1 Flow-Chart of the Follow-Up Study.



In essence, the case study approach used in the follow-up consists of several strategies. An open-ended structured interview is developed to gather evidence. One aspect of collecting accurate data is to establish a healthy rapport with the participants. Recognition and acknowledgement of the contribution of the nurse create greater comfort during interview sessions. The approach facilitates her assertion of her own ideas and feelings about the learning environment.

The primary concern of the researcher at this stage is the combined effect of the experimental curriculum and the hospital learning milieu. During the interview, the researcher seeks to determine the interests of the beginning nurse practitioners in continuing education after the experiment and their goals for learning process. Data are collected on the effects of the experimental curriculum - the awareness of continuing education, value of life-long learning, ability to seek further information and evidence of coping skills. Does the curriculum raise their awareness of continuing learning? Does it help them to seek further knowledge? Does it foster analysis and problem-solving skills? Is the content and process appropriate to their career stages? Does it assist them to identify opportunity for learning? How do the nurses feel about the curriculum?

In addition, the researcher observes the clinical setting. Do the staff development strategies developed in the hospital coincide with what the nurses aims for? To what extent is learning being facilitated? Are the nurses motivated rather than passive in seeking learning opportunities? Does the environment facilitate nurse inquiry as opposed to mere information receiving? Does the clinical area stimulate cooperation rather than competition? Do the staff talk <u>with</u> the nurses, as distinct from talking <u>at</u> them? Does the environment encourage creativity rather than mindless uniformity? Do senior staff assist the nurses to see the need for continuing education? How do the senior staff act toward the beginning nurse practitioners? What attempts are used to foster self evaluation and enhance the nurses' self concept? Do the senior nurses include the beginning nurse practitioners in the decision making process? Could the senior staff develop viable

strategies that motivate the nurses? In addition, what are the effects of other health professionals on the beginning nurse practitiones? Does the involvement of other health professionals lead to a better learning environment? How does behaviour of the other health professionals affect the nurse? Do the nurses develop a support group to assist each other? How do they communicate among themselves and hospital personnel?

In some cases, the physical environment is also observed. Is the ward's noticeboard "educational" in nature? What is the educational theme, if there is any? Are there any learning resources and equipment?

By collecting these data, one is able to establish a picture and delineate the salient factors contributing to the effectiveness of continuing nursing education.

The final phase of the follow-up study consists of evaluation. Evaluation, as defined in this study, is the process of providing information so that one may effectively plan and improve the continuing education process. This is accomplished by comparing what is currently happening with what is planned and what is ideally desired. The evaluation occurs at two levels.

On one level, one is primarily concerned with the impact of the experimental curriculum. Do the beginning nurse practitioners think and act differently as a result of being exposed to the experiment? If so, how? If not, why not? The examination of nurses' learning is accomplished through different evaluation instruments.

On the second level, one examines the clinical learning milieu to determine those factors which are significant to the nurses' learning behaviour. Do the beginning nurse practitioners change their attitudes toward learning as a result of exposure to the hospital environment? Do supevisory styles of senior nurses facilitate learning values? Do other nurses and health professionals have any impact in developing educational values among

new nurses? These are just a few of the questions.

In summary, the follow-up study attempts to determine the extent to which desired educational changes occur and where improvements could be made to the continuing education process. The case study methodology is intended to provide systematic procedures for gathering data about the learning process and to help those involved in nursing education to plan and implement a more effective programme in future.

5. The Four Case Studies

5.1 Introduction

The case studies were conducted in hospitals within the Illawarra Area Health Service. The Service was one of the four pilot Area Health Services established in December 1983. It comprises the hospital facilities located in the Wollongong City and Shellharbour Local Government Areas.

The population of more than quarter of a million in this area is concentrated on a narrow coastal plain bounded by the Illawarra escarpment which runs parallel to the coast. The public health facilities within the area comprise hospital facilities in the highly urbanised areas of Wollongong, Bulli, Coledale, Port Kembla, Shellharbour and Kiama, as well as a wide range of community health services including residential services for the mentally ill and developmentally disabled.

Hospital size varies from 150 beds to 400 beds and includes Medical, Surgical, Paediatric, Maternity, Intensive Care, Accident and Emergency, Operating Theatres and Rehabilitation Areas.

Because of timing and accessibility problems, four clinical areas at different locations were selected for detailed case work. These areas were observed and staff were

interviewed individually or in small groups for the main part of the case studies. Experimental group nurses who could not be observed in other settings were subsequently interviewed.

Crucial to the success of any type of observation is that it should fit in with the ward routine. A fear expressed by some ward staff when the researcher first explored the possibility of carrying out the case study was that it would upset ward routine. The researcher therefore had been anxious not to cause disruption in the clinical areas. In the event, the fear by some staff that if the ward was busy, there would be an upset to the routine was not borne out by the comments made.

5.2 Case Study 1

The unit in which Nurses A and B works has been active in continuing nursing education. The Nurse Unit Manager 1 (N.U.M. I) indicated to the researcher that she had little exposure to continuing education at her own early career stage. Her sensitivity to the needs of the beginning nurse practitioner therefore influenced her decision to pursue support and gather information to assist the newly graduated nurses in a way that she, herself, had not been supported.

N.U.M. 1 seemed to have a clear perspective on continuing nursing education and what she wanted to achieve in her unit. During the interview, she indicated to the researcher that she realised the importance of continuing education in her unit, especially for the beginning nurse practitioners. "I realise the way in which the nurse learns is as important as what she learns."

N.U.M. 1 pointed out that a key belief for herself was to move away from being too directive towards encouraging more staff-staff and staff-patient interaction. The role she designed for the experienced nursing staff was to act as a facilitator, initiating innovative nursing activities and offering perspectives for Nurses A and B on how things were

carried out. She believed important aspects in her unit activities were the development of the beginning nurse practitioners and making suggestions for a "nursing strategy". As an administrator, N.U.M. 1 understood she must retain authority over Nurses A and B. However, she did not wish to structure their actual nursing practice. Therefore, the staff development strategies employed for Nurses A and B included staff discussions, opinion seeking activities and recourse to other health professionals within and outside the unit. Also, Nurses A and B were asked to take note of circulars, memoranda and events on the unit's noticeboard. The intention of these activities was to encourage Nurses A and B to become more aware of the educational programmes and learning activities.

N.U.M. 1's less directive approach was confirmed by Nurses A and B during the follow-up interview. Both Nurses A and B reported independently that N. U. M. 1 was particularly aware of her directiveness and worked to moderate that style. Nurses A and B recalled that when they were first placed in the unit, N.U.M. 1 often asked closed questions during staff reporting and discussion periods. As the time progressed, the style of questioning shifted and stimulated inquiry by Nurses A and B. For instance, she moved from questions such as "What is the patient saying about his treatment?", "Is it good or bad to nurse the patient in such a position?" to having Nurses A and B find examples that supported or denied their assessment and nursing intervention of patients.

The physical position of N.U.M. 1 in a staff reporting session was noted. N.U.M. 1 was sitting among the nursing staff rather than at the middle of the desk as most of the unit managers did traditionally. When questioned subsequently, she indicated that sitting at the middle of the desk had a definite authority advantage. However, physically relocating to the same level as other nursing staff meant that she could effectively join the group. This tended to encourage staff openness when they felt there was not an authority threat. She felt more comfortable when her authority was mediated by movement into and out of the staff group.

During the staff reporting session, N.U.M. 1 attempted to encourage the beginning nurse practitioners to think through their feelings, values and nursing actions. Nurses A and B were asked to give their opinions about patients' progress. When questions about patient and nursing issues were asked of N.U.M. 1, she redirected them back to the group rather than answering them herself.

Searching out points of view from different staff clearly provided the beginning nurse practitioners with a mechanism to see and understand different perspectives in nursing. Nurse Unit Manager 1 spurred independent inquiry which encouraged the beginning nurse practitioners to think for themselves rather than being "deposited" with knowledge; hence the nurses' abstract level of thinking was improved.

Physical actions, value statements and staff development strategies, communicated to the beginning nurse practitioners a way of thinking and acting. During the implementation of the nursing activity, this included having Nurses A and B work in a team. This encouraged empathy by developing understanding and appreciation of nursing issues, raised their abstract level of thinking, dispelled pre-conceived notions by exposing them to various perspectives and generally enhanced their self-concepts in relation to learning. Through being provided with information on alternative nursing approaches, the nurses were able to develop an appreciation for the validity of continuing education.

Though beneficial educationally, the non-directive approach by N. U. M. 1 also created uncertainty initially. Nurses A and B reported that they were confused and somewhat frustrated by N. U. M. 1's supervisory style. Traditionally, nursing is a hierarchical profession with directives often issued from above. Tension occurred as a result of the beginning nurse practitioners not knowing what "the Nurse Unit Manager 1 wanted." There was often no "right" or "wrong" answer when Nurses A and B were responding to N. U. M. 1's questions. The forming of nursing teams, though, served to foster co-operation among the beginning nurse practitioners and their colleagues. Breaking into

small teams had previously been an uncommon occurrence in this unit.

In the final evaluation, both Nurses A and B came to prefer N.U.M. 1's approach as indicated by their favourable comments, "It is good to work here", "I understand why continuing learning is important after graduation", "I have learnt a lot since working here", "I like what has been going on in this unit", "I am thinking about ideas I have not thought about before". By evoking active involvement, staff and patient interactions were encouraged.

Perhaps the focal point in Case Study 1 can be summarised by what Nurse Unit Manager 1 stated:

> "If one of the goals of continuing nursing education is consciousness raising in order to improve understanding of life long learning, then one must be sensitive to the needs of the nurses. Where are my nurses in terms of skills and level of awareness? No teaching or learning can take place until this is ascertained. Activities should emerge from these needs. As much as possible, these activities should be personalised so that nurses can more readily empathise with the experience. As a nurse unit manager, I have to be flexible in planning activities for these new nurse graduates."

5.3. Case Study 2

Initially, the nature of the interaction between the researcher and the Nurse Unit Manager II (N.U.M. II) was uncomfortable when the unit manager was approached for follow-up case study. The relationship was somewhat strained as N. U. M. II was uncomfortable with the case study methodology. Unfortunately, this was due in part to misunderstanding, possibly arising from lack of clarity in the researcher's attempts to outline the aims of the interview. She thought that the researcher was there to "evaluate" her. Once this idea was clarified, the follow-up study went smoothly.

N. U. M. II had some teaching experience, having worked previously in a school of nursing. During that period, she had been involved with inservice education programmes and therefore had a basic understanding of continuing nursing education. Prior to the

arrival of beginning Nurses C and D, she had planned educational activities for them.

N. U. M. II believed that beginning nurse practitioners needed to take more initiative and that it was her role to help Nurses C and D to become more inquisitive and to look at nursing more critically. She felt that beginning nurse practitioners should develop a personal sense of professionalism. N. U. M. II firmly believed in team work. She allocated Nurses C and D to various teams, to foster team work concepts and to help them to appreciate other team workers' input and their contributions to the unit. N. U. M. II further believed that personal relationships in her unit could affect the quality of patient care. Therefore the beginning nurse practitioners needed to learn ways to resolve personal conflicts at the earliest date. Interestingly, N. U. M. II also indicated to the researcher that an important goal for her was to become less directive and controlling. She felt that this would encourage more initiative.

The staff development strategies employed by N.U.M. II changed as she attempted to stimulate, through inquiry method, the continuing educational experience of Nurses C & D. As time progressed, it became evident that a major goal for N.U.M. II was to have them understand what it was like to work in a team and to develop team concepts. Opportunities for initiative were also provided.

N. U. M. II was very open in expressing her opinion of the process of continuing education for beginning nurse practitioners in her unit. She felt the unit staff needed a stronger philosophical base before implementing educational activities. Further, she indicated that the planned educational activities should have been reviewed by the unit staff. She stated, "I felt like I was drowning and not getting any information from staff who were in the position to help." She wished that more sharing between staff had occurred in supporting the beginning nurse practitioner.

Yet when the researcher questioned whether N. U. M. II had tried to share educational activities with other units, she replied it was not a priority. She was concerned with others just "jumping on the bandwagon without genuine commitment". She had little interaction with the Director of Nursing because "she did not appear to be terribly supportive". She felt she developed a stronger relationship with her staff. At times, she did not feel so much the unit manager, but more of "a guide and a support person".

During the observation period, the researcher had the opportunity to examine records of educational activities held previously for Nurses C and D. The activities were very cognitively oriented initially, including items such as cardiac resuscitation and various physical disorders. A new framework was unfolded in the more recent activities to bring the affective domain of nursing into the perspective of the unit.

The approach to nursing, as well as the intent of N.U.M. II to be less controlling, encouraged self direction of Nurses C and D. The basic structure of various nursing activities was in fact developed by N.U.M. II; however, what happened within the structure was determined by the staff. Each nursing team took responsibility for a list of patients and their activities. They had to learn the patients' nursing problems and management in detail and determine what nursing strategies were used. Eventually, each team gave presentations in the patient reporting session. This device forced more team co-operation.

The researcher observed that Nurses C and D were genuinely enjoying their presentations, as demonstrated by the amount of enthusiasm generated and by the attention given by all staff. It was notable that not one staff member was talking during observed reporting. In addition, N. U. M. II constantly provided supportive behaviour by facial gestures and verbal statements. N. U. M. II felt that she did "communicate something special" by the presentations, which encouraged more enthusiasm and team work within the unit.

In one instance during the reporting period, N. U. M. II attempted to dispel preconceived notions about a patient. She attempted to help Nurse C clarify medical information in the patient's case note. She asked Nurse C to reread the medical information. N. U. M. II then directed questions to Nurse C and helped her to discover how she had misinterpreted the information. During the subsequent interview with Nurse C, she recalled how such action enhanced her ability to think critically and analyse, as well as developing in her a deeper understanding of the patient's problem.

There were other physical signs of continuing education activity within the unit. A large bulletin board containing various continuing education programmes within and outside the hospital was obvious in the nursing station. Several major nursing reference books were held in a book cabinet and there were several folders of journal articles related to updated nursing issues and several videos related to surgical disorders. All these materials were unlocked and available.

The interviews with Nurses C and D substantiated the other observations that they really did enjoy the educational activities of the unit. Some comments were:

> "I now show more concern about the value of my learning activities."
> "There is so much to learn after you graduated."
> "The education activities here help me more fully understand a patient's problem."
> "I have developed a lot since I have worked here."
> "I must take more responsibility for my own learning."

Nurses C and D felt N.U.M. II's supportive manner in allowing them to determine their own nursing activities, yet with clear instructions of the requirements of the unit and what was expected of them, provided an atmosphere of trust and opportunity for initiative.

The strategy employed by N.U.M. II of assigning Nurses A and B into team leader positions was notable for its fostering of education awareness. Nurse C mentioned

particularly that she found such arrangements stressful initially. However, with her theoretical background and support from N.U.M. II, she was feeling more comfortable as time progressed. She was deeply aware there was so much to learn to function effectively as a team leader. Nurse D saw N.U.M. II's strategy as developing her insight into "how do you make decisions; how do you deal with patients and relatives who are bossy, and what does it take to be a leader?" Both nurses were pleased they were involved in the experimental programme previously as they were able to speak their minds and able to ventilate their feelings.

Both Nurses C and D felt the experimental programme had been effective in developing their awareness of continuing nursing education. They believed they were able to seek opportunity and involvement in learning activities which otherwise they would have missed. Nurse C indicated that she had done more thinking about further education and that because the unit was active in educational activities, she was more committed to learning. She was contemplating the nursing degree course at the University. Nurse D believed her learning in the unit had been the greater because she had participated in the experimental programme which provided her with background learning skills. Both nurses felt the unit had generated "enthusiasm", "excitement", and "pride" in further education. They had developed a deeper understanding of why continuing education is important in nursing. "I can certainly relate what I learned in the programme to the activity here", Nurse C said.

Both nurses also commented on the efforts made by N. U. M. II in organising activities that would further their knowledge. For instance, pharmaceutical representatives visited the unit and demonstrated equipment or explained new drugs. Nurses' presentations, in which staff had to read patient case notes and follow consultants' around, generated interests and questions about the condition of patient's. Staff learnt to be more inquisitive.

In essence, Case Study 2 indicated that the various strategies employed by N.U.M. II had interesting ramifications. N. U. M. II, by being less directive and by engaging the beginning nurse practitioners in more dialogue and team work, fostered co-operation. She encouraged critical thinking abilities and a better understanding of continuing education. Her belief and effort gave nurses a more positive concept in continuing education.

5.4. Case Study 3

Nurse Unit Manager III's (N.U.M. III) initial goal for the beginning nurse practitioners E and F was for them to become more competent and to gain confidence in activities within their unit. During the follow-up interview, N.U.M. III explained the programmes planned specifically for the College nurse graduates. The structure of the programme was partly influenced by the information conveyed to her by the Director of Nursing, her understanding of the College pre-service programme and her personal interest in education.

N.U.M. III had recently commenced a part-time degree programme in education because she believed in the importance of staff and patient education and wished to equip herself and assist her staff to be more effective in patient education. N.U.M. III was particularly interested in having the researcher discuss activities related to continuing education.

By combining educational theories with her own sense of what the beginning nurse practitioner needed, she had developed objectives for Nurses E and F. These objectives included:

1. To assist in the role transition from student to registered nurse.
2. To foster a feeling of acceptance and belonging in the unit.
3. To provide the new graduate an opportunity to develop and further clinical skills.
4. To integrate the graduate into the multidisciplinary team approach.

N.U.M. III perceived her supervisory role as a facilitator in enabling Nurses E and F to initiate questions about things they wanted to know and to assist them to develop an increased ability to co-operate in team work. She facilitated activities and strategies which created more nurse interactions and dialogue, fostered co-operation and developed critical thinking abilities in patient care. The actual supervisory process employed by N.U.M. III included question-asking and drawing comparisons to show similarities and differences of nursing activities. Through dialogue, she attempted to foster self-direction and initiative. She recalled initially that the dialogical approach used caused some confusion because Nurses E and F were given freedom to initiate new nursing ideas, - freedom which they had not experienced before and with which they were unable to cope. Subsequent to this confusion, N.U.M. III structured the nursing activities but allowed for Nurses E and F to determine what they wanted to implement within that framework.

N.U.M. III mentioned to the researcher that she regularly reported her supervisory activity and the nurses' progress to the Director of Nursing, who was fully supportive. However, when she shared the idea with some other Nurse Unit Managers, their interest was not forthcoming and represented a failure to meet the responsibility to "prepare and support the next generation".

Physical evidence of education activities for nursing staff was obvious to the researcher. There was a bulletin board with notices of forthcoming educational events. Educational events were also entered in the ward's diary so that staff were aware of time and place of the activity. Staff were always encouraged to participate in these programmes.

During the changeover period, N.U.M. III always attempted to ascertain the current level of knowledge and understanding that Nurses E and F showed about the patients under their care. The kind of questions asked by N.U.M. III were more inquiry oriented. For instance, in discussing a patient who was newly admitted by Nurse E and after describing the background history, N. U. M. III asked if anyone knew why certain nursing

strategies had been implemented. She requested Nurse E to explain any difficulty encountered. She also requested unit staff to suggest any possible alternative strategy and appeared to be very interested in listening to staff comment.

Throughout the patient reporting session, staff were asked to explain their nursing activities and patients' progress. Their answers typically demonstrated better understanding and insight into their activities, as well as abstract thinking ability. It was encouraging for the researcher to observe that both Nurses E and F participated actively in the discussion and questioned some of the nursing decisions taken.

The relationship between N.U.M. III and other health professionals appeared to be good. On the day of the researcher's visit, a clinical nurse specialist was invited to speak with the staff after the patient reporting session. The researcher was told subsequently that guest speakers were often invited to share their expertise and provide different perspectives on patient care. The N.U.M. was selective, only inviting those who could hold the attention of the staff and convey important concepts. Because of the abstractness of some of the nursing issues, appropriate books and journal articles were often organised and recommended for the unit staff. Films were also used quite frequently although the N.U.M. had difficulty in obtaining a film projector.

Nurses E and F generally agreed that N.U.M. III had always been very open, respectful of others, and humanistically oriented in her supervisory style. However, Nurse F did indicate that Nurse Unit Manager III did seem to gain tighter control of the unit by her style and she demanded more from her staff to meet the unit goals and expected excellence in patient care. Both nurses commented that they were gaining confidence and became more competent because of N. U. M. III's approach.

Nurses E and F saw themselves "growing in work" and "becoming more interested in further learning" as a result of working in this unit. They felt they had been "working

more productively in a team" and "able to meet the unit standards better".

The two beginning nurse practitioners interviewed saw continuing education as a combined effort on their part and on the part of their employer. The activities organised by N.U.M. III were seen as part of this larger effort, broadening their appreciation and acceptance of life-long learning in the nursing profession.

The two beginning nurse practitioners reported that they had become increasingly aware of the importance of co-operating with other team members in their actions. Initially, they could not make decisions and relied heavily on other team members to support their activities. They were now more confident and began to evaluate their own actions as a result of activities organised by N.U.M. III.

In summary, even the researcher considered the discussion with N.U.M. III a mutual learning and growing experience. The beginning nurse practitioners had developed a more positive self-concept. They demonstrated more self-confidence by voicing opinions readily. They were eager to share information and seemed proud to talk about their nursing activities. They also appeared more eager and interested in seeking opportunities to learn. Both felt N.U.M. III's effort had contributed to their professional growth. As Nurse F summed up:

> "I really appreciated the sense of support I received from her (Nurse Unit Manager III). There were times when I felt very discouraged about what I was doing, that spending the time some other way outside nursing would have been easier and less frustrating for me. Being able to share feelings with her (Nurse Unit Manager III) without feeling criticised but sympathised with or just listened to was a lot of encouragement to keep working. ... I much appreciated the sense of humanism on her part, it added a dimension of nursing and decreased anxiety".

5.5. Case Study 4

The researcher first met Nurse Unite Manager IV (N.U.M. IV) a year prior to the study in a meeting organised to prepare clinical staff who would be supervising the nursing

students during clinical practicum. Visits were made to her unit on several occasions throughout that period.

N.U.M. IV was excited about the placement of beginning nurse practitioners G and H. She had been a keen supporter of the college nursing programme and was eager to observe the products of the college system. She indicated to the researcher that she had become involved with organising continuing educational activities because she felt that these existed an urgent need.

N.U.M. IV saw continuing education as much more than an exercise in communicating information about nursing; experienced nursing staff had an obligation to provide the beginning nurse practitioner with a general awareness of social reality and an understanding of certain working concepts in hospital so as to avoid a cultural shock during their transitional period.

N.U.M. IV explained that she tried to adapt her supervisory practice to the learning needs of Nurses G and H. She aimed to assist Nurses G and H to foster positive ideas about nursing and to encourage them to think about and appraise their own practice. She tried to expose Nurses G and H to a variety of nursing situations so as to learn and use different nursing strategies. By asking Nurses G and H to participate in various levels of nursing activites, N.U.M. IV attempted to communicate the importance of seeking opportunity to learn, to practice and to develop confidence.

N.U.M. IV also indicated to the researcher that the transitional period for Nurses G and H had been difficult as they lacked confidence initially. However, they were able to cope with their work on the basis of adequate background knowledge and were able to approach other staff as resource people.

A major problem commented upon by N.U.M. IV was that she did not have enough time to plan learning experiences for Nurses G and H. There were too many orders coming from more experienced staff and too few opportunities for Nurses G and H to make independent nursing decisions for their patients. She felt that the tendency for more senior nurses to direct activities might be attributed to a basic feeling of insecurity in some of those staff in her unit. Despite her preparation and explanation, some of her staff appeared to feel threatened by the college graduates. She was specifically concerned with her staff projecting their insecurity and conveying inadequate information towards Nurses G and H. She would also have preferred to involve other health professionals in assisting Nurses G and H.

N.U.M. IV believed staff in her unit could have a major effect during the transitional period of Nurses G and H. "Any unsympathetic staff can be critical, and because of workload, they may place time pressures and become too critical with the new college graduates". When such situations did occur, she intervened. She believed a nurse's first obligations were to the patients and her professional colleagues. If she could improve nursing care and at the same time provide educational support for the beginning nurse practitioners, she would be satisfied.

During the observation session, the researcher noted that N.U.M. IV's supervisory process was (1) to give information, (2) to obtain feedback from, and (3) to involve Nurses G and H with activities that revealed their understanding of the information given. In addition, N.U.M. IV asked inquiry-oriented questions of both beginning nurse practitioners. For instance, "Why do you think Dr. X prescribed such treatement for Mr. A?" (following a consultant round of Nurse G's patients). "Why does Mr. B seem a bit upset?" (following the visitor time). Through questioning, Nurse Unit Manager IV attempted to clarify perceptions and understanding of a particular event.

N.U.M. IV appeared to have the ability to change her approach when discussion or activities with Nurses G and H were proving to be somewhat inappropriate or unsuccessful. The researcher observed that when a specialist came to examine one of Nurse H's patients, N.U.M. IV intervened, suggesting that the specialist could explain to Nurse H while examining the patient. The strategy was subsequently noted to be successful.

The researcher further observed that positive reinforcement was constantly given to Nurses G and H to heighten their feelings of self-worth. When discussing patients' conditions during the reporting session, N.U.M. IV in one instance told Nurses G and H, "I am very pleased with your patients' progress. The care you girls have given was very good despite the fact that we were a bit chaotic this morning", "Thank you for your help", "You deserve an early mark".

N.U.M. IV's approach also aimed at more abstract thinking. When discussing a patient who had been negative in receiving nursing care, she encouraged Nurses G and H to clarify their own feelings as well as gaining greater understanding. The following question was asked:

"How did you feel when you approached Mr. C?"

Some responses from Nurses G and H were:

"Unhappy, because he is so rude".

"Awful, he keeps on telling everyone off".

"I don't like to approach him alone because he always accuses people who try to help him".

A general discussion was subsequently followed in which the patient's problems were redefined and new interventions were planned.

During the visit, a bulletin board of continuing education activities was well-used in the nursing station. Nurse Unit Manager IV made a special point in the ward diary to remind

unit staff of various educational activities.

The other health professionals in the hospital had been asked to talk to and provide support to Nurses G and H. The day when the researcher visited the unit, it was noted that a physiotherapist was demonstrating to the unit staff various rehabilitative exercises and activities. Several interesting equipment items were shown and demonstrated. Such activities had been uncommon in the researcher's previous clinical experience.

Information obtained from Nurses G and H substantiated the researcher's observation. It was reported by both Nurses G and H that the unit staff were initially formal and controlling in their interaction with both beginning practitioners, structuring the activities completely. However, N.U.M. IV's approach was less formal. She urged peer teaching from the unit staff and was always available to be used as a resource person when Nurses G and H needed help. Her approach provided both of them with the opportunity to view their own practice and the nursing profession with different perspectives and generated more enthusiasm.

Previously, neither nurse considered continuous nursing education to be an issue in her career once they had graduated from the pre-service nursing programme. The clinical experience encouraged them to examine the process of life-long learning and positively reinforced what they had experienced since graduation.

Nurse G was surprised that she had more contact with the hospital medical library since her employment. These frequent visits were encouraged by her need and desire to know more about various medical conditions. When it was discovered that the library was lacking in some materials, Nurse G travelled to the library at the New South Wales College of Nursing in Sydney.

Both Nurses G and H commented that they had learnt a lot and were surprised at their own development. They also felt that they had showed increased interest, understanding and sensitivity to nursing as a profession and the need for further learning. They cited some instances of practice that previously would have worried them but about which they had now developed confidence. They had also become more capable of expressing themselves. Nurse G recalled that previously she spoke infrequently. Now she began verbalising much more in patients' conferences. Both of them felt more comfortable working in a variety of nursing situations.

In summarising Case Study IV, the researcher could see positive changes in both Nurses G and H, since their graduation, especially in relation to their attitudes towards learning. Perhaps as both nurses pointed out, one of the very strong influences in their progress had been that of Nurse Unit Manager IV. As Nurse G commented:

> "In many situations where help and advice were required, she (Nurse Unit Manager IV) was always available. She obviously enjoys supporting her staff and I can feel it. She has a warm personality and she is interested in supporting us to learn. I just feel obligated to keep up my standard and to learn."

6. The Interviews

The positive learning environments found in the above clinical settings were contrasted in the negative comments reported in interview by some experimental group nurses from other settings. These comments appeared to be recurrent and concerned staff development and learning activities, staff relationships and the Nurse Unit Manager. There were strong indications from the respondents that motivation to learn and job satisfaction had both been affected. Their main statements are therefore first reported directly, followed by discussion in the next section.

6.1 Statements related to staff development and learning activities:

"There is so much to learn and familiarise oneself with yet little learning opportunity has been provided for me".

"The staff are not helpful - Nobody is interested in teaching you".

"At times I felt that the hospital was not interested in your further education".

"There was no staff development activity. I wasn't prepared for the extended role".

"I was disappointed because there was no staff development activity. I wasn't enjoying my work as much as I thought".

"Occasionally I felt a loss of self-esteem and work satisfaction because there was no staff support".

"The ward is not often busy, yet nobody wants to teach you anything".

"I know I am not performing as well as I should because there is very little opportunity for me to learn".

"I need more experience and learning opportunity on the ward, but there is very little educational activity going on".

"There were many procedures which I felt I had not had sufficient practice in and knowledge at doing, but no teaching is taking place".

"I was simply unprepared for coping with rigid hierarchical systems. There is no staff development activity to help me".

"How could I take the responsibility of being in charge of enrolled nurses without first being taught?"

"I found I was generally lacking in ability to organise my day, but nobody wants to know".

"Coping with the day to day nursing of the ward and very sick patients was a traumatic experience. It was also demoralising as there was no inservice education".

"I lack experience in some nursing skills and the responsibility is a big problem. I feel certain that I would have functioned much better if there was inservice education".

"They have forgotten they have a teaching commitment.

6.2 Statements related to staff relationships:

"I perceived many staff as being obstructive and non-motivated".

"The method of training caused me to encounter aggressive comment and even cold indifference at times".

"Working with red tape and hostile staff has been stressful".

"Help from some staff are far from forthcoming".

"In the ward, I was assumed to be another dumb nurse by other personnels until I could prove otherwise".

"I was too tired and when no support came from fellow workers, I became unmotivated".

"I had to abandon my ideas in order to fit into the new situation, otherwise I did not get acceptance".

"Everyone else wanted to change me and does not want me to be critical".

"Some hostility because I constantly asked questions and sought knowledge".

"Disillusionment with non-professional attitudes of some workers towards me".

"Coping with ward routing and relating to other staff had been difficult".

"Some ward staff were not over-enthusiastic, some were helpful but others seemed to resent my presence".

"They dislike us, they felt they had to be on their toes because we are college trained".

"The staff relationships are strained".

"Some staff have their own clique and they don't like to involve us".

"They were often in disagreement and this could demoralising".

6.3 Statement related to the Nurse Unit Manager:

"I couldn't be the nurse I want to be because I lack guidance from her (Nurse Unit Manager)".

"I worried a lot about work, I talked to the Nurse Unit Manager, but she did not seem to be interested".

"Because of her attitude, I have to work harder to prove myself. It is stressful".

"The charge sister did not want a college nurse in her ward".

"She (Nurse Unit Manager) appeared to only highlight my weakness and never my strength".

"I am angry with the charge nurse. She is ignorant about what continuing education is about".

"I have requested to transfer to another ward to get away from the charge sister, but it doesn't help your reputation".

"Routine appeared valued over people here".

"It is hard to learn new skills when the Nurse Unit Manager is so traditional".

"I lacked confidence because the charge nurse never explains my role".

"Sometimes it felt like slave labour. There is no respect form the charge sister".

"The Nurse Unit Manager applies pressure for everyone to conform to her system".

"I suggested that a patient might benefit from seeing a social worker and was told by her (charge nurse) that we didn't have time to worry about it".

"I lacked self-confidence to argue for changes because of the Nurse Unit Manager's attitude".

"I felt loss of confidence dealing with authority figures".

"She (charge sister) had not attended any continuing education programms since she qualified ten years ago".

"The Nurse Unit Manager only gives lip service to continuing education".

"She does not understand any principle of education".

"The charge sister was not interested in what I need to learn".

7. Discussion of the Case Study Findings

This section presents a discussion of observations and interviews. The purpose of the case studies was to answer the research questions: What facttors, if any, produced significant changes in the beginning nurse practitioner's learning behaviour after the experimental programme? What factors, if any, increased or decreased nurse awareness of and interest in continuing nursing education?

Four key elements were identified during the case studies. These included (1) the experimental curriculum, (2) the staff development strategies and learning activities, (3) the staff relationships, and (4) the attitude and competency of the Nurse Unit Manager.

7.1. The Experimental Curriculum

The aim of the experimental programme was to develop a curriculum that would meet the beginning nurse practitioners' professional needs. Therefore their views of the experimental curriculum were of paramount importance. The experimental curriculum objectives had been accorded higher mean scores as discussed previously and the beginning nurses were probed further about this during the interviews.

It should be recalled that the curriculum content was determined by the beginning nurse practitioners' career stage needs. During the implementation process, it became clear that some beginning nurse practitioners were particularly interested in discussing issues related to clinical nursing while others were more eager to develop their administrative skills. At the outset, most of the topics chosen focused on skills learning. As the beginning nurse practitioners became more adept at integrating cognitive and affective materials, the focus shifted towards the understanding of educational values and more controversial issues in nursing.

There were several considerations in making these changes. In trying to implement a curriculum from the adult education perspective, the researcher noticed some beginning nurse practitioners had more experience with an adult education approach than others. Those who had little experience and knowledge of adult education tended to focus on the more obvious aspects of content. The nurses' reactions during the implementation process prompted the researcher to examine, re-evaluate and modify the approach of the curriculum.

In some cases, this meant dealing with individual differences and interests. From the researcher's point of view, materials and activities were selected to enhance the beginning nurse practitioners' perspectives and value systems in continuing education. The general goal was to encourage them to appreciate the need for lifelong learning. Although there was a scheduled programme involving careful timing, minor changes occurred during the implementation process due to enthusiasm of the participants. For example, in most cases, the sheer quantity of materials had to be increased. As the curriculum progressed, there were difficulties in confining content within the time frame planned.

During the interviews, beginning nurse practitioners were asked about the effectiveness of the experimental curriculum in meeting their professional needs. For most, this was effective. However, some indicated through their comments that they would have to be taught how to learn from their daily work. Some respondents claimed difficulty in seeing what was there to be learnt at the beginning of the experimental programme, but this was resolved after they had entered the workforce:

> "I was only able to understand what we had discussed after I had observed a similar situation in the clinical area. I was able to understand better than I thought I would".
>
> "Everything is much clearer when you have the opportunity to experience what you learn".

"I thought a lot of it was irrelevant. However, it was gradually making sense after I had been in the workforce for a while".

Most respondents equated effectiveness of the informal discussion teaching method, with the fact that they were more involved with their own learning and active participation:

"This method of learning is very effective for me personally, as I can learn things easier when I participate in discussion rather than just being told about it".

"It has struck me that I can learn more through discussing with my peers than from books".

"The discussion was much more effective. I found it a lot more interesting and even read a bit more at night before I came to the session".

Active participation was often linked with the opportunity for peer contact. There seemed little doubt that many respondents enjoyed the opportunity to share ideas and views with others:

"Talking to others, letting them explain their views and how they feel, instead of being lectured to all the time".

"The discussion with others, and learning from their personal views and experiences was much better than reading from books and was easier to understand.

There were also indications that the respondents enjoyed the smaller group approach, the use of less formal teaching methods and the participation of every group member:

"The idea of small group discussion is good, as it encourages people to learn more, also they have to prepare more as they cannot hide behind others".

"I like being in a small group with discussion in which everyone took an active part".

There were other comments about advantages of the experimental curriculum, the majority of which referred to the enchantment of their learning; e.g.

(a) the level of the content was appropriate,

(b) reading guidelines were provided beforehand,

(c) the participants were involved in deciding the focus of the discussion,

(d) different views could be examined and clarified,

(e) the programme gave the participants opportunity to develop more insight of various nursing issues,

(f) participants were enthusiastic and discussions were under supervision of the researcher,

(g) a chance to examine at first hand and hear directly the views of other participants, and

(h) the participants were able to express their concerns about entering the workforce.

The respondents were asked about the disadvantages. The majority found no disadvantages. Several, however did not like participating in the programme during their "own time". This is because they were college students whose programme and commitments already occupied them full time.

Lack of time was also mentioned by some respondents. Because of the time factor, each session of the programme was scheduled for one and half hours and several topics were included in each session:

> "We did not have enough time to discuss everything we would like to have done and having to cover several topics in a session did not give us enough time to examine the issues thoroughly".
>
> "There wasn't much time to express you view, but that is really no great complaint as you couldn't cover everything even if you wanted to".

A feeling of lack of security was reported by some respondents as they realised their professional responsibility once they became registered nurses.

> "I felt a bit insecure about lack of adequate skills. I realised there was so much to learn".
>
> "As I had more insight into my responsibility, I felt ill-at-ease and was apprehensive, although I am better now".

A few students commented upon lack of objectives for the programme when it was first commenced. They were unsure what they were supposed to learn. However, the researcher had to live with this complaint. Announcing the objectives clearly at the outset could have proven to be too efficient a method of communication of intent about the entire experimental programme, thereby destroying its experimental value. No objectives were specified at commencement but were disclosed after the experiment was complete.

7.2 The Staff Development Strategies

All four Nurse Unit Managers were observed to be keen to stimulate better nurse-patient relationships and more independence in nursing practice. The staff development strategies formed around these aims. At the point of implementation, this meant less staff control and directiveness than is normally observed in the clinical area.

Instead, the use of techniques, such as open-ended questions and positive reinforcement of nurse participation, encouraged the beginning nurse practitioners to think for themselves and to make their own nursing decisions. The supervisory frameworks used by the Nurse Unit Managers included staff discussions, nurses presentations, guest speakers and visual aids. During these activities, the Nurse Unit Managers asked questions likely to stimulate deeper understanding of patients' problems to inspire independent inquiry, to encourage beginning nurse practitioners to see similarities and differences between patients' conditions, and to confront them with nursing and technical issues.

There were certain noticeable characteristics that made these four clinical units similar in their staff development approaches. The Nurse Unit Managers were all willing to experiment with new teaching methods and designs. They understood how adults learnt and put that understanding into practice. They often adopted an unstructured approach to nursing and a willingness to meet the educational needs of beginning practitioners even if it meant changing the nursing action in midstream. They appeared prepared to risk and experiment in their staff development activities. They utilised the experience of other staff as a resource for beginning practitioners' learning. They were able to establish warm, empathetic relationships with the beginning practitioners, relationships that facilitated growth and gave support during that growth process.

Characteristic of these unit managers was their interest in continuing their own learning. In fact, in the two cases where the Nurse Unit Managers were studying towards tertiary education qualifications, the nurse-centered, inquiry approach was most in evidence.

However, not all nurses in these units were effective in assisting the beginning practitioners. Indeed, the process of staff development was not always straightforward. In one case, a senior staff member was allocated the responsibility of supervising the beginning nurse practitioner. The senior nurse's approach consisted of telling the other what to do, and little else. Her approach did not allow for dialogue, critical thinking, decision making and creativity. In this instance, the senior nurse attempted to convey the value of learning and patient care while using a very authoritarian style. When the Nurse Unit Manager noticed the problem, she provided the senior nurse with what she felt were the inherent values to be communicated. The senior nurse re-evaluated and subsequently changed her approach.

Overall, these staff development strategies based on an education perspective appeared to be successful. All four Nurse Unit Managers shared a common goal of helping the beginning practitioners to maintain professional competence and to realise their potential.

Staff in their units shared responsibility for staff development activities, - it was not seen to be an activity for a single person. The staff development process permeated all nursing activities, so that through individual actions, each staff member contributed to maximising the potential of others.

In summary, if continuing nursing education activities are to be successful in the clinical areas, all staff must be involved in planning these development strategies. The Nurse Unit Manager must have a deep commitment to and skill in the involvement of staff in the organisational and educational process. This creates more interest in the activities, and the implications are evident. Staff development must involve an approach to meet the changing needs of the nurses. Many continuing education activities fail by neglect of appropriate strategy development and reinforcement in the clinical setting.

7.3 The Staff Relationships

Where Nurse Unit Managers were supportive, the beginning nurse practitioners reported that they came to understand themselves and patients more fully. They felt they were more able to talk about their feelings openly and honestly. They were more assertive and able to defend their own points of view. Simultaneously, Nurse Unit Managers also developed respect and appreciation for their beginning nurse practitioners. In particular, several Nurse Unit Managers reported that they could more easily relate to the beginning nurse practitioners in their clinical areas.

In these areas, beginning nurse practitioners were allowed to work in small teams to plan and implement nursing activities. From this type of experience, they developed good team work behaviour and problem-solving skills. Some activities permitted them to assume leadership roles and practise leadership skills. Working in a team encouraged them towards self-direction and staff interaction. By posing increasingly difficult questions and nursing problems, Nurse Unit Managers helped the junior nurses to develop absract thinking and critical analysis skills. The problem-solving approach

forced many beginning nurse practitioners to examine nursing and ethical issues.

Where the learning environment was favourable, there were also closer interactions between the beginning nurse practitioners and other health professionals; for example, through the presentations given by each group. Generally the discussion fostered many ideas about patients' problems.

In the health care settings observed, there were obvious indications that the nursing administration encouraged Nurse Unit Managers generally to try new activities, the former showing keen interest on the basis that continuing nursing education ought to be incorporated into the evaluation criteria for the hosptial quality assurance programme.

There were clear indications that the "better" clinical areas were distinguished by certain kinds of work relationships among nurses. In brief, staff were seen to engage in four "critical practices" in their work with one another. Firstly, there was frequent and continuous discussion about nursing practice (as distinct from the social lives of nurses). Through such interaction, staff built up a common interest of job-related issues. Secondly, mutual observation among the staff provided a basis for useful evaluation. Through such observation and feedback, staff provided each other with shared referents.

Thirdly, there were opportunities for planning and implementing joint nursing activities. By joint work on various nursing activities, staff shared the considerable burden of ward operating and made reasonable standards of performance attainable by them and by the beginning practitioners. Finally, staff supported each other in their practice, all taking at one time or another, the role of team leader.

These staff relationships were in certain ways influenced by the perspectives and practices of the Nurse Unit Manager. Nurse Unit Managers were able to stimulate and strengthen nurses' participation and commitment by describing their expectations for collegial work,

particularly at important occasions such as staff meeting. They were able to enact the desired behaviour, by asking staff for evaluation and by providing them useful observations of their practice. The Nurse Unit Managers were also able to sanction the desired behaviour by visible and public praise for collegial efforts.

Clearly, the staff relationships that had been observed in these case studies went beyond those generally found in a vast majority of clinical settings.

7.4 The Nurse Unit Manager Competencies

From the information gathered in this study, it was possible to delineate the Nurse Unit Manager competencies that could facilitate the beginning nurse practitioners' goals for continuing education. The beginning practitioners in this study described certain personal attributes which they felt were necessary pre-requisites to a successful educational process in the clinical areas. Generally, they felt that Nurse Unit Managers must not feel threatened but rather predisposed towrd continuing education, be self-confident, and feel supported. Moreover, they should be able to determine nurses' learning needs and to involve them from that point.

The following observations provide recurrent support for these competencies.

Observation 1

Some Nurse Unit Managers only make superficial efforts in their staff development activities. They attempt to "add" a teaching component to their administrative activities. Because they lack commitment and an adequate background in and conceptual framework for continuing education, they attempt only to deal with minor issues and changes. They lack an awareness of how attitudinal and value systems of the beginning nurse practitioners influence their learning.

Perhaps what the Nurse Unit Manager requires is to have a sound philosophical and andragogic base for continuing education and an understanding of the inherent need in nurses for development. She needs to understand how various forces can influence nurses and the learning process.

Observation 2

The Nurse Unit Manager can be uncomfortable with the topic because she is unfamiliar with that particular nursing activity. She needs a greater understanding in that area so that she can deal with the beginning nurse practitioner in a sensitive way.

It is therefore important for the Nurse Unit Manager to have a strong knowledge base and experience about different nursing areas and be able to examine problems from the perspectives of nurses. She needs to have the experience and be able to deal with sensitive and controversial nursing issues. Learning about and developing an understanding of the beginning nurse practitioner's needs will encourage the Nurse Unit Manager to communicate a stronger feeling for the importance of continuing education.

Observation 3

Where the Nurse Unit Manager is supportive, the educational activities developed are generally well thought out and functional. However, as one Nurse Unit Manager pointed out, there can be difficulties in determining appropriate activities. Some Nurse Unit Managers have problems implementing strategies which encourage nurses to co-operate and to appreciate colleagues and clients. Some Nurse Unit Managers wish they could make more use of appropriate activities and equipment to enhance learning. One Nurse Unit Manager was concerned about how to create an environment and learning atmosphere appropriate to the beginning nurse practitioner's needs. Three of the four Nurse Unit Managers in this study expressed the wish that they could involve more outside people to support the educational activities.

Perhaps it is essential that the Nurse Unit Manager should be aware of some conceptual models for continuing education. The Nurse Unit Manager should have the support and guidance to develop activities which adequately reflect the needs of the beginning nurse practitioners and evaluate these activities. A Nurse Unit Manager should be able to plan staff development strategies which enhance both learning and nursing activities. In addition, Nurse Unit Manager should have the ability to use educational equipment as part of their repertoire. To help develop a more positive learning concept for nurses, the Nurse Unit Manager should have the ability to create a learning environment which is more reflective of the beginning nurse practitioner's needs and the professional nature of nursing. Finally, she should be able to structure her teaching activities to include other nurses and health professionals.

Observation 4

Some Nurse Unit Managers are unable to find and use educational materials. They want more exposure to current materials and resources, and more information on how to adapt materials to their nurses.

To sum up: the role of the Nurse Unit Manager in continuing education has often been overlooked. It is essential that any planning of continuing nursing education should include the Nurse Unit Manager and emphasise the importance of her involvement in development of the learning environment and in the incorporation of other health professionals.

7.5 An Emerging Perspective

What can be said to have emerged from the case studies that could be useful in the design of continuing nursing education programmes?

While it is important to have a well planned continuing education programme, the learning environment in the clinical area must also be supportive if professional nurses are to

develop the concept of learning as a lifelong activity. Staff can create a desirable environment by supporting continued learning and by making opportunities available to beginning nurse practitioners for the additional learning experiences they need to keep up with changing practice. Senior nurses must serve as role models and assume responsibility for their own continuous self-improvement, and must integrate the concept of continuing education into various aspects of the nursing activities. Beginning practitioners will then accept continuous learning as a part of their professional responsibility.

Of even greater significant in developing this concept of continuing nursing education is the environment maintained by the clinical setting. It is set up by the Nurse Unit Manager and filters through to junior staff levels. Therefore the Nurse Unit Manager must serve as a role-model in developing and maintaining a working environment that is conducive to continued learning. She must be interested not only in systematic, planned education activities, but in learning from colleagues and other personnel. Belief in the concept of continuing education must be reflected by clinical practice that allows staff to pool their resources while using problem solving approaches to patient care to test their ideas or seek further knowledge and skills. One cannot over-emphasise the importance of the Nurse Unit Manager's commitment to provide opportunities for beginning practitioners to seek further educational experiences.

Nurses must have the freedom to test or apply significant new knowledge in their work situations. Their total commitment to continued learning can be achieved only if the learners are given freedom to determine their own objectives for learning and to implement changes in their work situations. All too often one encounters disappointment in junior nurses after they have entered the workforce as there is a lack of administrative support in their search of opportunity to learn.

Continuing nursing education is a two-dimensional process. It involves individual growth through independent study and development of strategic judgements regarding priorities which contribute to self-development. It also involves the participation in systematic, planned learning activities. If we subscribe to the theory that the individual nurse is responsible for a liftetime of learning, one may question whose responsibility it is to foster the development of this commitment as part of professional practice? Based on the case studies, one cannot discount the valuable learning opportunities that are present in day-to-day nursing practice. Neither can one discount the importance of staff development strategies, staff relationships and the influences of the Nurse Unit Manager.

The crux of the matter is that we must provide continuing nursing education which allows for active nurse participation and have relevance readily apparent to them. Nurse Unit Managers genuinely committed to continuing education must be concerned first about the needs of the nurses and the environment in which they function, and second, the pragmatic development of the activities in tune with these needs. The continuing education planner can be guided by some of the responses and feedback from participants in the case studies.

In the chapter that follows, this dynamic analysis is complemented by a brief conceptual analysis utilising management/organizational theories.

CHAPTER NINE

CASE STUDY (PART 2) OF LEARNING MILIEUX: LEADERSHIP AND THE TEAM AS MOTIVATORS OF PROFESSIONAL DEVELOPMENT

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1. Introduction

Another emerging picture from the case studies which requires rigorous conceptual analysis is leadership and the notion of team. It was particularly evident in these case studies that a delicate interplay appeared between the style of leadership by the Nurse Unit Manager and the context in which a team environment was provided.

This is often thought to be a contradiction between the organisation's bureaucratic and hierarchial structure, and the notion of a team environment in which the major aim is to develop independent professionals. As King (1990) has pointed out (personal communication), if these types of case study demonstrate anything that is useful for continuing education planning, it is the success of the N.U.M. in bringing these two features of leadership and team participation together in some order, as distinct from allowing to exist as unwelcome contradictions. This can be demonstrated in the following section, using job satisfaction concepts discussed in Chapter 2, particularly The Human Relations Based Theories (May, 1949; Likert, 1967; Sergiovanni and Starratt, 1971; and Locke, 1975) which emphasise the social interactions of workers on the job. The basic premises of leadership and team process were proposed as a suitable theoretical base for consideration.

2. Leadership

From the research point of view, one important characteristic shared by the four Nurse Unit Managers (N.U.M) was that each believed the traditional managerial practice of exercising control through authority did not produce the best results, that the resentment

created by this direct authority tended to limit its effectiveness. They believed that better results could be achieved when a different motivational process was employed. They strived to apply ego motives which enhanced the beginning nurse's sense of personal worth and importance. Under their leadership, the different motivational forces within the beginning nurse coalesced into a strong force aimed at the accomplishment of established nursing objectives.

Each N.U.M. developed her staff into a working team with high group loyalty by using participation.

Each displayed to the beginning nurses, distinctive attitudes and behaviour toward staff as individual humans as: ("She is supportive, friendly and helpful." "She is kind but firm, genuinely interested in the well-being of staff and endeavors to treat people in a sensitive, considered way." "She shows confidence in the ability and motivation of staff rather than distrust." "Her confidence in staff leads her to high expectations as to their level of performance." "She sees that each staff is well trained for her particular duty. She also helps us (beginning nurses) to develop our skills. This involves giving us relevant experience and coaching whenever the opportunity offers.")

The data of the case study seems to support the Human Relationships Theories for example, Likert, 1967; Sergiovanni and Starratt, 1971; that subordinates react favourably to experiences which they feel are supportive and contribute to their sense of importance and personal worth. All four managers seemed to have discovered that the motivational forces acting in each nurse within their unit could be cumulative and reinforcing when the interactions between nurses and with others conveyed feelings of support and recognition. It was particularly evident that these managers strived to generate interactions between staff such that each felt confident in her potentialities and believed that her abilities were being well used.

This observation of supportive leadership points to a dimension essential for the success of continuing nursing education, namely, that the mission of the educational activity be seen by staff as genuinely important. To be highly motivated, each nurse must feel that the educational objectives are of significance and that her participation contributes in an indispensable manner to the unit's achievement of these objectives.

Supportive leadership contains within it another important element. To be an effective leader, the N.U.M. must take into consideration the experience and expectations of each of her staff. In determining what those expectations are, she cannot rely solely on her observations and impressions. It helps the N.U.M. to try to put herself into the staff's positions and to endeavour to see things as the staff see them. Yet this is not enough. She needs direct evidence if she is to know how the staff views things and to estimate the kinds of behaviour and interaction which will be seen by the staff as supportive. The N.U.M. needs accurate information (through continuously sought feedback) as to how her behaviour is actually seen by the staff.

3. The Team Process

The team process became a focal point as far back as the Hawthorne Studies (Roethlisberger and Dickson, 1939) and has been demonstrated as critically important in many studies since then.

An important observation arises from the present case studies. In all cases, there was evidence that one of the most important sources of satisfaction for the beginning nurses was the favourable response they received from the staff they were close to and whose approval and support they were eager to have. This observation seems to support those Human Relations Theories (Mayo, 1949; Likert, 1967;) which suggest that as the work group is one in which one spends much time, one is particularly eager to achieve and maintain a sense of personal worth. As a consequence, most people are highly motivated

to believe in the legitimacy of the goals and values of their work group in order to obtain recognition, support and security. It can be suggested, therefore, that N.U.M. will make full use of the potential capacities of her staff only when her staff work in a team that has effective skills of interaction and high-performance goals that are 'owned' as legitimate.

The significance of this observation becomes more evident when we examine the data of the case studies. All four nursing units consist of a tightly knit, effectively functioning social system. This social system is made up of interlocking teams with a high degree of team loyalty among nurses and favourable attitudes and trust between N.U.M. and staff. Sensitivity to others and relatively high levels of skill in personal interaction are present. These skills permit effective participation in decisions on various nursing activities. It was evident in all four cases that participation was used, for example, to establish learning objectives which intergrated the needs and desires of the beginning nurses. High levels of reciprocal influence occurred, and high levels of co-ordination were achieved in these nursing units.

One important chacteristic shared by the four units was that communication was efficient and effective. There was a flow from one part of the unit to another of all the relevant information important for each nursing decision and action. The N.U.M. has developed what might well be called a highly effective social system for interaction.

The most notable similarity of the team process in all cases (to the present author), was that the staff accepted the goals and decisions of the team and communicated fully to other team members. They welcomed communication from other members. They helped implement the goals and decisions that were seen as important to the team and that were consistent with their own experience.

When differences of opinion among staff did arise, all team members participated fully in the ward meeting and presented clearly the reasons for holding different points of view.

If, after further discussion, the team still preferred a course of action different from what an individual favoured, the individual accepted the decision the team preferred.

4. A Note on "Theory Y" Leadership

This case study was deliberately cast at a simple and straightforward conceptual level so that its principal value as a data base for elaborating emerging issues would not be distorted. An attempt was made, however, to superimpose several reference grids from the standard list of available management/leadership/organizational theories. Two of these - Herzberg's (1959) two factor theory and McGregor's (1960) Theory X and Theory Y, seemed to provide some limited possibilities.

Herzberg's theory has been discussed previously in the statistical analysis. Further attempts to apply Two-Factor Theory netted little in the way of a more revealing case study examination.

McGregor's Theory X and Theory Y was not referred to in the earlier part of the thesis. A more elaborative comment should be made. McGregor (1960) described two types of leadership: the first operates on Theory X, which assumes that all people dislike work and as a result, have to be coerced, controlled and directed by their leaders; the second operates on Theory Y, which assumes that people have an intrinsic interest in their work, want to be self-directing, seek responsibility, and are capable of being creative in solving the organization's problems. In essence, the central principle of organization which derives from Theory X is that of direction and control through the exercise of authority. The central principle which derives from Theory Y is that of integration: the creation of conditions such that the members of the organization can achieve their own goals best by directing their efforts towards the success of the enterprise.

Naturally, integration means working together for the success of the organization so that the individual may share the resulting rewards. But management's implicit assumption is often that working together means adjusting to the requirements of the organization as management perceives them. It still seems inconceivable to some, that individuals seeking their own goals, would simultaneously further the ends of the organization. If the assumptions of Theory Y are valid, the practical question is whether, and to what extent, such conditions can be created in the health service system.

Among the persuasive characteristics of bureaucratic life in the health care system today is a managerial attitude which assumes almost without question that the organizational requirements take precedence over the needs of individual members. Basically, the employment relationship is that in return for the salary and rewards which are offered, the individual will accept direction and control from above. The requirements of the organization are given priority automatically and almost without question. If the individual's personal goals are considered at all, it is assumed that the rewards of salary and position will satisfy him. It is rare indeed for the management to give the individual the opportunity to be a genuine and active partner in decision making, even though it may affect his personal goals.

Yet the case study has demonstrated that the concept of integration and self-control is feasible and that the organization will be more effective in achieving its objectives if adjustments are made, in significant ways, to the needs and goals of its members.

There was evidence in the case study that each N.U.M. understood that objectives of her unit would not be achieved best by unilateral decision making process, because this form of management by direction and control would not create the commitment which would utilise the full resources of those affected. As one N.U.M. pointed out, "the lesser motivation and the lesser resulting degree of self-direction are costs which, when added up over time, will more than offset the gains obtained by unilateral decisions for the good

of the organization".

Perfect integration of organizational requirements and individual goals and needs is, of course, not a realistic objective. In adopting a supportive role, the N.U.M. seeks that degree of integration in which the beginning nurses could achieve their goals best by directing their own efforts towards the success of the unit. As explained by one N.U.M., "best" means that this alternative will be more attractive than the many others available to the beginning nurse: for example, indifference, hostility and non-compliance. It means that the beginning nurse will continuously be encouraged to develop and utilise voluntarily her capacities, her knowledge, her skill, her ingenuity in ways which contribute to the success of the unit.

Acceptance of Theory Y does not imply abdication, or "soft management" and permissiveness by the N.U.M. These managers believe authority is an inappropriate means for obtaining commitment to objectives. Other forms of influence - help and support, for example - are required for this purpose. This observation supports the underlying assumptions of Theory Y which emphasise the capacity of human beings for self-control, and the consequent possibility of greater managerial reliance on other means of influence. Nevertheless, these managers are aware that authority is an appropriate means for control under certain circumstances - particularly where genuine commitment to objectives cannot be achieved. This again supports the assumptions of Theory Y which do not deny the appropriateness of authority per se, but which do not rely upon it for all purposes and under all circumstances.

For the sake of crisp reporting of the research, the full rewriting of the case study material into McGregor's conceptualization has not be included. The ground for non inclusion was identical to that mentioned in the Herzberg discussion. It was not possible to demonstrate that anything new or original would emerge, as findings in this case tend to support the general trend of findings from dozens of studies utilising McGregor's work.

In short, organizations tending towards Theory Y are likely to produce a more intrinsically motivated workforce, but the accepted efficacy of Theory X or Theory Y approaches ultimately depends on the philosophical underpinning of the outcome measures chosen. For example, in the hospital environment, if a strict count were to be taken of the number of patients being cared for by the nurse in a single hour, certain wards operating on Theory X would be "best". If the outcomes were to be measured on the intelligent application of and variation to a standard routine (in order to improve a patient's comfort), other wards would be judged "best".

* * * *

Herein lies the nub of the problem in undertaking this kind of research. Behind every endeavour to diminish the importance of the individual to the 'safe' level of performer-of-routines lies a particular a priori judgement about the dominating need for organizational efficiency. Conversely the choice of a different a priori judgement will result in a different approach appearing to be "best".

Research findings in this kind of study, cannot 'prove' the absolute supremacy of an approach. They can only demonstrate best options for making manifest, improved outcomes based on such a priori judgements.

5. The Summary

The beginning nurse practitioners typically face a bureaucratic hospital environment that is complex in organization and often complex in terms of staff and patient relationships. It seems natural that they should experience low levels of confidence. The case studies demonstrate that supportive leadership on the part of the N.U.M. is the key to the development of self confidence in the beginning nurses. This is achieved partly by her

role as protector of the bureaucracy, partly as educator and supervisor and partly as a professional friend. The other critical element for the beginning nurses is to understand where they fit and how they fit into the complex organization of the hospital so that they can make meaning of their work, thereby undertaking it more efficiently and more professionally in light of their own and organizational goals. What can be claimed here is that it is possible to combine bureaucracy and team participation in nursing units that employ beginning nurses. This is an important claim, the sense of which has often been denied or ignored in recent years as proponents and protagonists have sought to enforce the supremacy of either the bureaucratic forms of organisation or the nursing team. The truth about good practice is that flexible balance between the two holds the key.

CHAPTER TEN

SUMMARY AND RECOMMENDATIONS

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Continuing nursing education is perceived by many nurses as an important professional issue. Since there appears to be considerable interest and need for continuing nursing education, one would assume such activities to be a frequent and regular part of the lives of nurses. Unfortunately, reports do not support such an assumption. Nurses invariably report that they have participated in a limited amount of staff development during their working lives. Whether a nurse receives any recognisable form of continuing education in the work environment of hospital or community is still partly a matter of chance.

It is clear that the quality of nursing care could be improved if we had a more systematic and effectively organised continuing education programme. It is also obvious that with an increasing range of societal and work pressures impinging on the lives of nurses, they need constant access to appropriate forms of continuing education as an important mechanism for coping with change. Yet what emerges is not so pleasant a picture.

When examining why continuing nursing education has remained in its present fragmented form, a recurrent cause of failure underlying many of these programmes is found to be the absence of a coherent conceptual framework to guide the curriculum design from a basis of agreed purposes and principles. Nurses are questioning the quality of educational offerings and the relationship between continuing education and nursing practice. There remains a pressing need to identify and agree upon those theoretical and practical aspects essential to the achievement of high standards of education. Only then are we likely to see continuing nursing education curricula grounded in objective thinking and capable of meeting the health care requirements of modern society as well as the professional interests and concerns of nurses themselves.

There may be many ways to achieve this. One of the many options could be that the continuing education programme should take into account the life stages of nurses involved. The basic premise is that it is crucial for the educator to uncover the professional and life stage needs of nurses in order to match educational activities with prior knowledge and existing workload.

This basic premise led to the present study, concerned with continuing nursing education, in particular with the beginning nurse practitioners from a college nursing programme. The question at the heart of the study was - how can curriculum in continuing nursing education be developed that will meet the nurses' career stage needs. The main aim of the study was to test that curriculum development.

A quasi-experiment was designed in which a continuing education programme focusing on the nurses' career stage needs was experienced by college nursing students, randomly allocated to an experimental group, prior to entering the workforce. While their peers, in a control group, received no special programme, the experimental group received a programme that was matched with their particular career stages in mind.

Among the quasi-experimental features of the study were:

a) the programme was implemented prior to the students entering the workforce;

b) the students' career stagtes were used to determine the contents of the curriculum;

c) the students were free to participate or not participate in curricular decision making;

d) learning guidelines were used prior to the students attending the programme;

e) the type of communication, discussion and elements of control which took place during the learning activities were designed to generate student responsibility in preparing and sharing their ideas;

f) the focus of the programme was concerned with the process of professionalisation, rather than the normal restricted efforts of keeping up to date in the basic discipline;

g) the approach of teaching and learning followed the principles of adult learning. The intention was to help the students to learn how to learn from their daily work and take up responsibility for their continuing learning.

For the evaluation of the experimental curriculum, the pre-test, post-test, control group design (Campbell and Stanley, 1966) was chosen as most appropriate. To this basic traditional design, a third stage was added, in which nurses' retention of outcomes was assessed, as were their opinions, in retrospect, about the curriculum objectives achieved. The outcome measures included the awareness of various continuing nursing education issues, and their attitudes towards job satisfaction.

Prior to the designing, implementing and evaluating of the experiment, a literature review was carried out. The literature review examined first the systems by means of which curriculum, both in general and specifically in nursing, have been developed. As the curriculum, the putting together of relevant parts to make a coherent and meaningful whole, was considered to be essentially nurse centered, the next section of the literature review dealt with the nurses' career and adult life stages. The third and last part of the literature review dealt with nurses' motivation to learn and how adult learning principles can be of assistance.

The limitations of the research were mainly those typically inherent in educational research that is conducted within the "untidy" reality of the educational system, as opposed to the much more controlled setting of the psychological learning laboratory. These limitations were compounded by the fact that subsequent learning also took place in the clinical areas where there were many additional uncontrolled variables. The Hawthorne effect, as in any experiment, was almost certainly a relevant interfering

variable.

The findings and conclusions of the main study are summarised below.

The findings show that the experimental curriculum could be an effective curriculum format. The conceptual framework for the curricular contents was based on the nurses' career stages development; particularly with the needs of the beginning nurse practitioners in mind. The beginning nurse practitioners undertaking the experimental curriculum had been shown to hold more positive attitudes in all aspects of criterion measures immediately after the experiment. However, it was also shown that after a period of six months, while the experimental nurses remained positive in some dimensions, the differences were no longer significant due to the increasing improvement of the control groups, probably due to the effects of the intervening clinical environments.

Examing the changes over time resulted in interesting findings. It was shown that immediately after the experiment, the curriculum had significant effects on continuing nursing education related to policy issues, aims of lifelong leraning, educational implementation processes, the learning climates and individual responsibility to learn. It had also significantly affected the nurses' perceptions of achievement, their perceptions of personal growth and their sense of professional responsibility. However, it was also found that the experimental curriculum had no significant effect on nurses' sense of professional recognition and their attitudes towards challenging work. Further, six months later, the signficiant effects of the experimental curriculum disappeared. Regardless of the criterion measures related to continuing nursing education and job satisfaction, the experimental curriculum failed to exert any change over time. While it may appear on the surface that the experimental curriculum has little direct consequential effect beyond the point of completion, the fact that there was no significant change (and indeed the experimental group nurses did not regress at all), might well demonstrate that the experimental curriculum may have a "holding" effect on nurses' learning.

The findings of this study further indicated that the size and location of the hospitals had no significant influence on the beginning nurses' attitudes towards continuing nursing education and job satisfaction in the first six months of their working life, except in relation to educational policy issues and sense of professional recognition.

Certain teaching strategies emerged as noteworthy in this study. It was shown that a discussion and seminar approach with peer students could be a successful learning medium and that the provision of learning guides before each learning session was beneficial in the learning experience. It was also found that curriculum that focused on nurses' career stages could be effective if facilitated by a supportive clinical environment as revealed in the case studies.

The case studies showed that the clinical areas most conducive to continuing nursing education were those that had staff development strategies. These strategies were intended to engage the nurses to learn actively. The nurse unit managers in these settings provided situations and climate that enhanced learning. These clinical areas were characterised by less direct control and more encouragement of independent nursing activities. The beginning nurse practitioners were allowed to determine their own learning needs and were encouraged to discuss their feelings and views honestly and openly.

In addition, it was also shown that in these settings there were increasing interactions between the nurse unit managers, other health professionals and the nurses. There were also tangible inducements. The staff noticeboard often reflected a more educational character with notices and information related to educational activities.

The case studies revealed that in order to implement continuing nursing education successfully, the involvement of the nurse unit managers was indispensible. The nurse unit managers need to have a sound philosophical and androgogical approach towards

continuing education. They need to have a broad nursing knowledge and experience of various nursing issues. They need to have an ability to initiate staff development strategies which relate to nurses' needs, and the ability to involve other health professionals. In addition, they need to be familiar with continuing education concepts, and have an ability to determine relevant learning materials and to adapt the learning environment to nurses' needs.

In summary, the findings of this study suggest that the experimental curriculum based on a concept of nurses' career stages had immediate effects on nurses' attitudes towards continuing nursing education. Its medium term effect was, however, modified by the clinical environment and leadership where the nurses practised. As a result of these findings, several conclusions and recommendations can be made.

Conclusion

While some nurses have worked out patterns of continuing learning for themselves that suit their needs and desires, too few nurses continue to learn throughout their lives. Learning opportunities are also far less abundant than they should be. In this final summing up, therefore, the central themes that have emerged in the study will be restated.

It is important to have a nursing curriculum that aids nurses' commitment to continuing learning. However, such a task is never easy. As discussed previously, because of the often inadequate curriculum frameworks, confusion and conflict exists as far as the fundamental conceptualisation of continuing nursing education is concerned. The present study, by using the nurses' career stages as a model, attempts to put forward a proposal in which continuing nursing education curriculum can be developed. The nurses' career stages model implies that as the nurses progress in their professional lives, they have different needs and distinctive profiles. Because of these different needs, nursing leaders and educationalists must design a tailor-made system of lifespan education and create

their own innovations in curriculum development.

Hence, it is suggested that the continuing educational needs of nurses can be adequately served by programmes of continuing education only if they are developed in terms of nurses' career stages needs. However, the rhetoric is only partially validated by the present study. While the curriculum design based on the career stages model demonstrated immediate significant effects, the effects were substantially mediated by the intervening clinical experience. This observation signifies the importance of the clinical environment on nurses' learning. It also signifies the importance of the nursing profession to provide a collective responsibility to foster learning in its members not only for the period of pre-service education but also the subsequent period of clinical practice. The senior nurses have an obligation to help their own members develop the ability to learn how to learn, through the setting of personal examples, and the provision of opportunities for learning.

The profession's view on continuing nursing education also needs to be reconceptualised. While the idea that continuing nursing education should be continued throughout nurses' lifespan wins universal acceptance, at present, the goals are often too restrictive; often being limited only to efforts to keep up to date on new developments in the profession or to remedy inadequate practice. Many nurses seem willing to accept simple programmes of direct action. For them, continuing nursing education often means only listening to a lecture or using a new nursing technique. No doubt such simple goals cannot be disregarded. Neither can they be deeply admired. Nurses often act as though participation is enough. Yet perhaps the goals of continuing nursing education should be refocused towards the entire process of professionalisation. Every nurse needs to understand the evolving nature of lifelong learning. Nurses need to be aware of new nursing developments to improve competence, to be innovative in practice in a constantly changing social environment, and to uphold the ideals of professionalism.

Perhaps more importantly, nurses should develop the awareness that the primary responsibility for learning rests on themselves. Each nurse should feel a deep and continuing concern that his or her own education be carried out throughout a lifetime of practice. They must try to learn from each situation, no matter how familiar, by viewing it creatively and in a new light. They must participate in activities that provide new ways to improve practice. They must allocate time for intensive periods of study, not merely acquiring new knowledge but also gaining a broader and deeper perspective to nursing. They must, in short, use very means of continuing education to maintain the life and vitality of their thought and practice.

This research was about nursing education - the experiment was about learning for lifelong learning and learning to develop positive attitudes towards continuing education. There are many facets to curriculum development and many ways in which continuing nursing education can be facilitated or hindered. Ultimately, however, the actual achievement of lifelong learning is a matter for the individual nurse.

Recommendations

In summary, there are several recommendations in the substance of the above discussion. These are based upon evidence in the quantitative and qualitative data of the experiment and case studies. These recommendations are:

1. That research be undertaken longitudinally into the beginning nurse practitioners' attitudes towards continuing nursing education over a longer time frame with a larger sample.
2. That curricula related to other nurses' career stages be developed and be subjected to trial and evaluation in order to ascertain the validity of the career stage based curriculum.
3. That research be initiated to examine the effect of variety of teaching methods used in continuing nursing education.

4. That attention be directed to the effects of the clinical environment on continuing nursing education programmes.
5. That future research be conducted to determine the nurse unit manager characteristics which lead to successful and unsuccessful implementation of continuing nursing educational activities in the clinical areas.
6. That further research be undertaken into barriers to innovative educational practice within the hospitals. Questions could be asked as to why continuing nursing education has not been implemented more broadly despite the nursing profession's expressed commitment to furtehr education.
7. That nurses be periodically freed from the pressures of responsibility for providing service and be allowed to participate in continuing education programmes.
8. That a longitudinal study be developed to examine long-term effects of one-time exposure to continuing education versus periodic exposure.

These recommendations are presented as feasible proposals. Hopefully, they will contribute to advancing a knowledge in the new emergent field of continuing nursing education. Certainly, there is no guarantee that these recommendations will result in more effective continuing education. Nevertheless, based on the findings of the present study, these appear to be logical and viable recommendations for improving continuing education activities and expanding research efforts. As researchers become more willing to experiment with innovative educational strategies, nurses become more involved with their learning process and would further a "new and better profession".

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LIFE STAGE CHARACTERISTICS OF NURSES AS DETERMINANTS TO CONTINUING EDUCATIONAL POLICY

Volume 2

A thesis submitted in fulfilment of the requirements for the award of the degree of

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by

FELIX KWAN HOK YUEN, R.N., B.A.(Hons.), M.Sc.

School of Learning Studies
Faculty of Education
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APPENDIX A

- THE DELPHI RESULTS

APPENDIX A1

2 April, 1986

Dear

I am currently researching continuing nursing education as my Ph.D. programme.

The continuing education programmes that many of us are in the process of developing are relatively new in concept within the nursing profession. There appears not to be an extensive literature available.

One of the issues I am currently investigating is the development of variables around the notion of career/life stages. In social science, one of the research methods available for building up ideas and a data base that would lead to development of variables such as these is the Delphi technique.

It is the Delphi technique activity that I am asking for your participation.

A brief description of Delphi technique is:

1. the exercise involves a group.

2. the goal of the exercise is information.

3. the information being sought is uncertain in the mind of the group.

4. a pre-formulated systematic procedure is followed in obtaining the group output.

During the Delphi, each participant will have an equal voice and vote in a series of questionnaires. Your response to these polls should be returned to me for compilation. This wil be returned to you, with further instructions for a second round of responses. Participants may change their minds at any time. Each round is an opportunity for you to reconsider your opinions in the light of results of the previous round. You may welcome such a chance to change your mind, but there is no pressure to do so. These rounds will be continued until the participants decide there is no longer a need to continue. Rounds will occur on a weekly basis, and it is expected that approximately half an hour per week of your time will be needed to complete each questionnaire.

Thank you for participating in the Delphi. I will of course keep you informed of the outcome of my small trial, and about the development of my thesis. If I can be of any assistance with your work, either research or curriculum development in future, I would be happy to do so.

I hope you find Delphi an interesting and challenging exercise.

Felix Yuen

DELPHI - ROUND 1

Directions

1. Read through the list of initial tentative variables which I have developed. The list serves as a starting point for you to react to and the purpose of this round is to add variables to this tentative list.

2. Place a question mark (?) in the column next to any variable you do not understand or you would like clarified.

3. Add your list of variables at the end of my list.

4. If you wish to modify any variable please rewrite the variable at the end of the list. Please put the number of the variable you have modified beside the rewritten variable for my reference.

5. One of the options on the Delphi is the removal of variables from future rounds. Please indicate the variable you would like to remove at the end of the list.

6. Also included are some questions to be answered. The results from these questions will be included on the next round. If you have any questions you would like to ask of other participants, or comments you would like to make please write them at the bottom of the additional page.

7. Including your name on this questionnaire is optional. If you give your name, it will remain known only to me and to my supervisor. Inclusion of names aid in contacting you between rounds if required.

8. If you have any questions, please contact me on extension 3576.

9. Please return the questionnaire.

Name: _____ Date: _____
(Optional)

Career/Life stages in the Professional Nurse can be identified as a number of variables.

These variables and any obvious stages within them are:

1. Physical Age
2. Years of Service
3. Positions

I would like to add my list of variables and obvious stages within them:

I would like to modify the variable:

I would like to remove the variable no:

Additional Questions

1. Have you participated in a Delphi technique before?

2. If yes, what were your reactions to that experience?

3. Do you have any suggestions on how this Delphi could be run better?

4. One of the options on the Delphi is the removal of variable from future rounds. What percentage of the members participating should be required to remove a variable?

   _____ Percent (%).

5. Questions you would like to ask other participants, or comments you would like to make.

APPENDIX A2

Dear

Thank you for your participation - Round 1.

I think it is important to summarise responses on Round 1.

There were 5 participants in Round 1 of whom none had participated in a Delphi technique before. One participant was not entirely certain of the Delphi technique and requested a more complete description. I have responded by explaining and providing relevant materials to the participant concerned.

Another participant commented that it would have been helpful to include a definition of the term "Professional". This participant adopted a very broad definition including most of the work in the administration, education and clinical areas but was unsure that this was the intended meaning.

I was depressed initially over the fundamental mistake of not clarifying the meaning of Professional Nurse. However, when I discussed this mistake with my supervisor, his reaction was exactly opposite. He was very enthusiastic and felt that the Delphi technique had worked in an exactly appropriate way by uncovering defects in the concept and underlying assumptions of the study.

Perhaps I should explain that the term "Professional Nurse" that underlies this study should be considered as a Registered Nurse (as classified by the Department of Health, N.S.W. - Public Hospital Nurses Award, 1985) currently employed in the clinical/ward setting.

I hope the approach I have taken will avoid further misunderstanding.

Thank you for participating in the Delphi - Round 2.

Felix Yuen

DELPHI - ROUND 2

Directions

1. Read the enclosed list of variables submitted by participants. Editing has been limited to removing exact duplications from participants' lists, and rephrasing to promote clarity and protect anonymity.
2. Add additional variables you feel still have been left out.
3. If you wish to rephrase/modify any variable, please rewrite the variable at the end of the list. Please put the number of the variable you have modified beside the rewritten variable for my reference.
4. You can vote to remove any variable from future rounds. Please indicate any variable you would like to remove at the end of the list. Please briefly indicate why you wish to remove the variables.
5. If you have any questions, please contact me at extension 3576.
7. Please return the questionnaire by

Name: _____ **Date:** _____

(optional)

A) List of variables submitted in Round 1. (Career and life stages in the Professional Nurse).

1) Physical Age

2) Sex

3) Years of Service Continuous

Disrupted

4) Position Held - Level

- Nature

- Setting

5) Education/Academic Credential

6) Years of study

7) Nursing Qualification - Certificate/Tertiary level

8) Geographic Location

9) Access to major clinical and education resources

10) Non Nursing Employment

11) Professional Involvement (Committee, Association)

B) I would like to add additional variables and obvious stages within them:

C) I would like to rephrase/modify the following variables:

D) I would like to remove the following variables. (Please indicate briefly your reasons).

Additional Questions

1) I wish to outline the career/developmental stages of the Professional Nurse, but I am uncertain as to the number of stages involved, the breakdown and descriptors to be used.

Please indicate the number of stages, the kind of breakdown and descriptors, and the criteria that you would expect to see in a study of this type.

2) What are your reasons for participating in the Delphi?

3) Do you have any suggestions on how this Delphi could be run better?

4) Are you receiving enough time to complete these questionnaires?

Yes ____ No _____

5) In Round 1, the following question was asked: "What percentage of the individuals participating should be required to remove a variable?" The following votes were received:

60% = 1

66.6% = 1

75% = 2

80% = 1

To arrive at a final decision, I am calling for a vote in the following alternatives. Please indicate your choice.

60% _____

66.6% _____

75% _____

80% _____

6) Questions you would like to ask other participants, or comments you would like to make:

APPENDIX A3

Dear

WELCOME TO DELPHI - ROUND 3

There were 5 participants in Round 2. The majority of the participants had chosen seventy-five percent (75%) as the required number of votes to remove a variable. This means that 4 votes would have been required to remove a variable. No variable received this number of votes. All variables are therefore retained in this round.

As you will notice, this round contains an increasing amount of material. This is a good indication that the Delphi technique is achieving what intended: eventual conglomerate of perceptions.

A summary of participants' responses on additional questions on Round 2 is also included for your interest.

Thank you once more for your efforts.

Yours sincerely,

FELIX YUEN.

SUMMARY OF PARTICIPANT'S RESPONSES ON

ADDITIONAL QUESTIONS ON ROUND 2

1. What are your reasons for participating in the Delphi?

   "Felix has asked me to participate in his research";

   "Latest in the topic under study";

   "Response to your request";

   "Latest in Delphi technique";

   "Help for a friend";

   "Curiosity and interest";

   "Small sense of contribution".

2. Do you have any suggestions on how the Delphi could be run better?

   "[At] first didn't quite understand the study – but prefer to wait before making comments. Now [I] feel fairly comfortable with it. [I] feel it is well run".

3. Are you receiving enough time to complete these questionnaires?

   Yes __4__ No __1__

   One participant indicates she has a few weeks that have been very busy with 3 days per week in clinical area.

   The overall responses suggest that generally participants feel they are receiving enough time to complete each round. Because of these responses, the time during which the participants have to return each round will continue to be seven days.

4. The following votes were received for percentage of participants required to remove a variable:

   60% – 1

   66.6% – 1

   75% – 3

   80% – 0

   Unless there is objection, 70% level will be used.

5. Questions or comments submitted by participants:

   "Why [did] people nominate the level of percentage they did to remove a variable?"

   "[I] find it difficult to understand how others had difficulty with the term a professional nurse. Now I ask: are the other participants nurses?"

   Answer: All participants are well qualified, registered nurses.

   "Is there a limit to the number of variables for use – does it come to a point when it [can] get out of hand?"

   Answer: The Delphi technique aims for consensus judgement. I believe there will be a limit to the number of variables.

   "When participating in the study, can you refer to references – as I have done – or is it preferred to brainstorm variable?"

   Answer: It is a valid approach in either case.

   I would also appreciate participants' views on the above questions and comments.

DELPHI – ROUND 3

DIRECTIONS

1. This questionnaire contains two parts.
2. Part one consists of a list of variables related to the career/developmental stages of the Professional Nurse. Imagine that you have one hundred dollars ($100) to be divided between the variables. This means that if you give a lot of dollars to one or two variables, you will have very little money left for the others. This may take a little juggling for it to work, but be sure to distribute exactly $100 amongst these variables according to your judgement of the relative worth of each.
3. In Part 2, please read the enclosed list of Career/Developmental Stages of the Professional Nurse submitted by participants. Your responses have been edited to combine similar descriptors, and to allow the expression of your ideas.
4. In the table in Part 2, please rate those Career/Developmental Stages descriptors in terms of:
   a) Importance:
      i) Very Important – most relevant to the developmental stages.
      ii) Important – is relevant to the developmental stages.
      iii) Slightly Important – insignificantly relevant to the developmental stages
      iv) Unimportant – not relevant to the developmental stages.
   b) Your confidence: that the career/developmental stage genuinely occurs, and is not just a figment or invention:
      i) Certain – that is a valid developmental stage.
      ii) Mostly Reliable – as a valid developmental stage.
      iii) Risky – many incorrect inferences can be drawn.
      iv) Unreliable – of no use as a decision base.
5. If you have any questions please contact me at Extension 3576.
6. Please return the questionnaire by

NAME: _____ DATE: _____
(Optional)

PART 1 VARIABLES VOTING

Please distribute $100 to the following variables:

		Dollars
1.	Physical Age	
2.	Sex	
3.	Years of Service – Continuous	
4.	Years of Service – Disrupted	
5.	Level of Position Held	
6.	Nature of Position Held	
7.	Setting in which Position is held	
8.	Education/Academic Awards	
9.	Nursing Qualifications	
10.	Geographic Location of Work	
11.	Place of Residence	
12.	Access to Major Clinical and Education Resources	
13.	Non Nursing Employment	
14.	Professional Involvement (Committee, Association)	
15.	Professional Involvement – Non Nursing	
16.	Family Involvement (Married, Children)	
	TOTAL=	100

PART 2

In this table below, please rate the career/development stages in the appropriate Importance Scale and Confidence Scale Columns. By inserting a tick (/). (The Scoring will be computed as follows: the career/developmental stage you indicate Very Important will be given (4) points; the Important will be given (3) points and so forth. Similar scoring method will be applied to the Confidence Scale).

CAREER/DEVELOPMENTAL STAGES IN THE PROFESSIONAL NURSE	IMPORTANCE				CONFIDENCE			
	VERY IMPORTANT	IMPORTANT	SLIGHTLY IMPORTANT	UNIMPORTANT	CERTAIN	MOSTLY RELIABLE	RISKY	UNRELIABLE
1. Beginning Practitioner								
2. Developing Practitioner								
3. Experienced Practitioner								
4. Stage 1 (1–2 yrs after Grad.)								
5. Stage 2 (2–5 yrs after Grad.)								
6. Stage 3 (5 yrs onwards after Graduation)								
7. Clinical Practitioner Role								
8. Education Role								
9. Administration Role								
10. Consultancy Role								
11. Mentor								
12. Learner/Student Stage								
13. Dependency/New Graduate Stage								
14. Conformity Stage								
15. Comfortable/Independent Stage								
16. Static (Resistant to change) Stage								

ADDITIONAL QUESTIONS

1. Was the Delphi or anything appearing on the Delphi a surprise to you?

   Yes _____ No _____

   Please explain:

2. Do you have any suggestions on how this Delphi could be run better?

3. Questions you would like to ask other participants, or comments you would like to make:

APPENDIX A4

DELPHI - ROUND 4

Dear

Thank you for participating in Round 3.

We continue on this round to vote on the variables and to determine the characteristics/descriptions of those variables we feel relevant to nurses' career/developmental stages.

As indicated in the Round 3 results, the dollar voting accounts for a good deal of variance among variables. However, none of the 16 variables are plainly irrelevant and therefore are all included. Some nurses' career/developmental stages were removed because they did not receive the sufficient number of votes.

Again, a summary of participants' responses on additional questions on Round 3 is included for your interests.

Yours sincerely,

Felix Yuen.

Results on Delphi — Round 3

Part 1: Variable Voting

Variables	Dollars Distributed	Number of Participants	Mean Dollars Distributed (n = 5)
1. Physical Age	0–5	3	
	6–10	2	
	11–20	0	
	21–50	0	
	51–100	0	5.425
2. Sex	0–5	4	
	6–10	1	
	11–20	0	
	21–50	0	
	51–100	0	3.85
3. Years of Service/Experience — Continuous	0–5	0	
	6–10	3	
	11–20	2	
	21–50	0	
	51–100	0	10.85
4. Years of Service — Disrupted	0–5	1	
	6–10	4	
	11–20	0	
	21–50	0	
	51–100	0	4.85
5. Level of Position Held	0–5	0	
	6–10	3	
	11–20	2	
	21–50	0	
	51–100	0	10.65
6. Nature of Position Held	0–5	0	
	6–10	3	
	11–20	2	
	21–50	0	
	51–100	0	8.87
7. Setting in which Position Held	0–5	0	
	6–10	2	
	11–20	3	
	21–50	0	
	51–100	0	4.225
8. Education/Academic Awards	0–5	0	
	6–10	2	
	11–20	3	
	21–50	0	
	51–100	0	11.95
9. Nursing Qualifications	0–5	0	
	6–10	1	
	11–20	4	
	21–50	0	
	51–100	0	12.25
10. Geographic Location of Work	0–5	3	
	6–10	2	
	11–20	0	
	21–50	0	
	51–100	0	4.825
11. Place of Residence	0–5	5	
	6–10	0	
	11–20	0	
	21–50	0	
	51–100	0	2.225

Variables	Dollars Distributed	Number of Participants	Mean Dollars Distributed (n = 5)
12. Access to Major Clinical and Education Resource	0–5	3	
	6–10	2	
	11–20	0	
	21–50	0	
	51–100	0	4.425
13. Non Nursing Employment	0–5	5	
	6–10	0	
	11–20	0	
	21–50	0	
	51–100	0	2.425
14. Professional Involvement (Committee, Association)	0–5	0	
	6–10	5	
	11–20	0	
	21–50	0	
	51–100	0	6.85
15. Professional Involvement – Non Nursing	0–5	5	
	6–10	0	
	11–20	0	
	21–50	0	
	51–100	0	2.3125
16. Family Involvement (Married, Children)	0–5	3	
	6–10	2	
	11–20	0	
	21–50	0	
	51–100	0	3.5625

In part 1, participants were requested to distribute $100 to 16 variables.

$$\text{Mean} = \frac{100}{16} = 6.25$$

The following variables with means less than 6.25:

1. Physical Age
2. Sex
3. Years of Service (Disrupted)
4. Setting in Which Position Held
5. Geographic Location of Work
6. Place of Residence
7. Access to Major Clinical and Education Resource
8. Non Nursing Employment
9. Professional Involvement (Non Nursing)
10. Family Involvement (Married, Children)

Part 2: Importance and Confidence Scale

Career/Developmental Stages in The Professional Nurse	Importance Scale		Confidence Scale	
	Total Score	Mean Score (n=5)	Total Score	Mean Score (n=5)
1. Beginning Practitioner	15	3	17	3.4
2. Developing Practitioner	18	3.6	18	3.66
3. Experienced Practitioner	16	3.2	19	3.8
4. Stage 1 (1–2 years after Graduate)	11	2.2	14	2.8
5. Stage 2 (2–5 years after Graduate)	12	2.4	15	3
6. Stage 3 (5 years onwards after Graduate)	12	2.4	14	2.8
7. Clinical Practitioner	17	3.4	14	2.8
8. Education Role	17	3.4	15	3
9. Administration Role	17	3.4	15	3
10. Consultancy Role	17	3.4	14	2.8
11. Mentor	16	3.2	12	2.4
12. Learner/Student Stage	12	2.4	14	2.8
13. Dependence/New Graduate Stage	14	2.8	12	2.4
14. Conformity Stage	12	2.4	12	2.4
15. Comfortable/Independent Stage	16	3.2	12	2.4
16. Static (Resistant to Change) Stage	16	3.2	12	2.4

Summary of Participants' Responses on

Additional Questions on Round 3

There were five participants on Round 3.

1. Was the Delphi or anything appearing on the Delphi a surprise to you?

   Yes: 3 No: 2

   "The rating scales were unexpected. However, it showed how similar the participants' thoughts were, although expresed differently."

   "(As in regard to career stage) points 10 and 11, I would understand to be fairly similar unless 'mentor' was focused more on personal/professional development and 'consultant' was focused specifically on treatment aims. Both stages, I believe, apply to the more senior level of nursing."

   "Yes, I suppose the aspect regarding value according to dollars. I suppose I am not used to thinking of these values in terms of money, an interesting aspect."

2. Do you have any suggestions on how this Delphi could be run better?

   "Yes, Part 2 was a little confusing (Career stages) 1, 2, 3, 4, 5, 6 and 12, 13, 14, 15, 16 seem to be similar stages. Are you attempting to see which set of variables is more 'certain'?"

   "If the instructions proceeded the response section immediately rather than on a separated sheet, this would be a small help."

3. Questions you would like to ask other participants, or comments you would like to make:

   "I am not quite sure of the distinction between 'importance' and 'confidence' in part 2, mainly because I'm unclear of the meaning of 'relevance' in this context."

   "(I) find filling table on part 2 very diffiuclt as the stages are so similar. I do not feel happy with the term 'risky' as it implies that one is dangerous. Does the person who contribut3d 'beginning practitioner' see the student in that stage? This round has taken a lot more thought and time. How did the other participants go?"

   "Yes, I would like to add that I support the research that Felix is doing as it is important for nurses to be involved in research."

DELPHI – ROUND 4

Directions

In the table enclosed,

1. read the list of variables and nurses developmental stages submitted by participants

2. indicate whether each variable is relevant to the nurses career/ developmental stages. If the answer is 'no', no further filling within the 'Characteristics' column is required. If the answer is 'yes', please provide specific characteristics/features of these variables within each 'Characteristic' column. An example is provided.

Example

Career/Developmental Stages		Variables	Relevance (Yes/No)	Characteristics of Variables
1.	Car driver	Sex	No	–
2.	Formula One Race Driver	Physical Age	Yes	20–30 years

3. If you have any questions, please contact me on extension 3576.

4. Please return the questionnaire by

Nurses' Career/ Developmental Stages	Variables	Relevance (Yes/No)	Characteristics of Variables
1. Beginning Practitioner	Physical Age		
	Sex		
	Years of Service/ Experience (Continuous)		
	Level of Position Held		
	Nature of Position Held		
	Setting in Which Position Held		
	Education/Academic Awards		
	Nursing Qualifications		
	Geographic Location of Work		
	Place of Residence		
	Access to Major Clinical & Education Resources		
	Non Nursing Employment		
	Professional Involvement (Committee, Association)		
	Family Involvement		
2. Developing Practitioner	Physical Age		
	Sex		
	Years of Service/ Experience (Continuous)		
	Level of Position Held		
	Nature of Position Held		
	Setting in Which Position Held		
	Education/Academic Awards		
	Nursing Qualifications		

Nurses' Career/ Developmental Stages	Variables	Relevance (Yes/No)	Characteristics of Variables
	Geographic Location of Work		
	Place of Residence		
	Access to Major Clinical & Education Resources		
	Non Nursing Employment		
	Professional Involvement (Committee, Association)		
	Family Involvement		
3. Experienced Practitioner	Physical Age		
	Sex		
	Years of Service/ Experience (Continuous)		
	Level of Position Held		
	Nature of Position Held		
	Setting in Which Position Held		
	Education/Academic Awards		
	Nursing Qualifications		
	Geographic Location of Work		
	Place of Residence		
	Access to Major Clinical & Education Resources		
	Non Nursing Employment		
	Professional Involvement (Committee, Association)		
	Family Involvement		

Nurses' Career/ Developmental Stages	Variables	Relevance (Yes/No)	Characteristics of Variables
4. Clinical Practitioner Role	Physical Age		
	Sex		
	Years of Service/ Experience (Continuous)		
	Level of Position Held		
	Nature of Position Held		
	Setting in Which Position Held		
	Education/Academic Awards		
	Nursing Qualifications		
	Geographic Location of Work		
	Place of Residence		
	Access to Major Clinical & Education Resources		
	Non Nursing Employment		
	Professional Involvement (Committee, Association)		
	Family Involvement		
5. Education Role	Physical Age		
	Sex		
	Years of Service/ Experience (Continuous)		
	Level of Position Held		
	Nature of Position Held		
	Setting in Which Position Held		
	Education/Academic Awards		

Nurses' Career/ Developmental Stages	Variables	Relevance (Yes/No)	Characteristics of Variables
	Geographic Location of Work		
	Place of Residence		
	Access to Major Clinical & Education Resources		
	Non Nursing Employment		
	Professional Involvement (Committee, Association)		
	Family Involvement		
6. Administration Role	Physical Age		
	Sex		
	Years of Service/ Experience (Continuous)		
	Level of Position Held		
	Nature of Position Held		
	Setting in Which Position Held		
	Education/Academic Awards		
	Nursing Qualifications		
	Geographic Location of Work		
	Place of Residence		
	Access to Major Clinical & Education Resources		
	Non Nursing Employment		
	Professional Involvement (Committee, Association)		
	Family Involvement		

Nurses' Career/ Developmental Stages	Variables	Relevance (Yes/No)	Characteristics of Variables
7. Consultancy Role	Physical Age		
	Sex		
	Years of Service/ Experience (Continuous)		
	Level of Position Held		
	Nature of Position Held		
	Setting in Which Position Held		
	Education/Academic Awards		
	Nursing Qualifications		
	Geographic Location of Work		
	Place of Residence		
	Access to Major Clinical & Education Resources		
	Non Nursing Employment		
	Professional Involvement (Committee, Association)		
	Family Involvement		

Additional Questions

1. Is this Delphi a good means of deciding intangible issues in this study?

   Yes: _____ No: _____

   Please explain your answer.

2. A piece of good/bad news!

   The decision to end Delphi is your decision to make. How should this decision be made?

3. Questions you would like to ask other participants, or comments you would like to make:

APPENDIX A5

Dear

Welcome to Delphi Round 5.

The main activity of Round 5 is voting on the "Characteristics of Variables" submitted by participants. In addition, you are requested to vote on the variables and nurses' career/developmental stages.

The decision to end Delphi is up to you to make. Participants on Round 4 suggested a majority decision of over 50%. This will be the method used. If over 50% of the participants on any Round vote for the Delphi to end, that will be the last round. One thing you might consider in making this decision is if there are still changes occurring in the voting. A lack of change, or stable votes from round to round, would suggest no further rounds would be required. If changes are still occurring, it might be prudent to continue Delphi until change diminish.

Again, thank you once more for your efforts.

Yours sincerely,

Felix Yuen.

Summary of Results on Delphi – Round 4

Code used in the Career/Developmental Stages

1 = Beginning Practitioner

2 = Developing Practitioner

3 = Experienced Practitioner

4 = Clinical Practitioner Role

5 = Education Role

6 = Administration Role

7 = Consultancy Role

Variables	Career/ Developmental Stages	Relevance Voting in Round 4 Participants 1	2	3	4	5	% of Relevance	Group Mean %	Dollar Voting in Round 3 mean=6.25
Physical Age	1	0	1	0	1	0	40		
	2	0	1	0	1	0	40		
	3	0	1	0	1	0	40		
	4	0	0	0	1	0	20		
	5	0	0	0	0	0	0		
	6	0	0	1	1	0	40		
	7	0	0	0	1	0	20	28.5	5.425
Sex	1	0	0	1	0	0	20		
	2	0	0	1	0	0	20		
	3	0	0	1	0	0	20		
	4	0	0	1	0	0	20		
	5	0	0	1	0	0	20		
	6	0	0	1	0	0	20		
	7	0	0	1	0	0	20	20	3.85
Years of Service	1	1	0	1	1	1	80		
	2	1	1	1	1	1	100		
	3	1	1	1	1	1	100		
	4	1	0	1	1	1	80		
	5	1	0	1	1	1	80		
	6	1	0	1	1	1	80		
	7	1	0	1	1	1	80	85.7	10.85
Level of Position	1	1	0	1	1	1	80		
	2	1	1	1	1	1	100		
	3	1	0	1	1	1	80		
	4	1	1	0	1	1	80		
	5	1	1	1	1	1	100		
	6	1	1	1	1	1	100		
	7	1	0	0	1	1	60	85.7	10.65
Nature of Position	1	1	0	1	1	1	80		
	2	1	0	0	1	1	60		
	3	1	0	1	1	1	80		
	4	1	1	0	1	1	80		
	5	1	1	1	1	1	100		
	6	1	0	1	1	1	80		
	7	1	0	1	1	1	80	68.5	8.87
Setting	1	1	1	1	1	0	80		
	2	1	0	1	1	0	60		
	3	1	0	1	1	0	60		
	4	1	1	1	0	1	80		
	5	1	1	1	1	1	100		
	6	1	0	1	1	1	80		
	7	1	0	1	1	1	80	77.1	4.225
Education/ Academic Awards	1	1	1	1	1	1	100		
	2	1	1	1	1	1	100		
	3	1	0	1	1	1	80		
	4	1	0	0	1	1	60		
	5	1	1	1	1	1	100		
	6	1	1	1	1	1	100		
	7	1	0	1	1	1	80	88.5	11.95
Nursing Qualification	1	1	1	1	1	1	100		
	2	1	1	1	1	1	100		
	3	1	1	1	1	1	100		
	4	1	1	1	1	1	100		
	5	1	1	1	1	1	100		
	6	1	1	1	1	1	100		
	7	1	1	1	1	1	100	100	12.25
Geographic Location	1	1	0	0	0	0	20		
	2	1	0	1	0	0	40		
	3	1	0	1	1	0	60		
	4	1	0	1	1	0	60		
	5	1	0	1	1	0	60		
	6	1	1	1	1	0	80		
	7	1	0	0	0	0	20	48.5	4.825
Place of Residence	1	0	0	0	0	0	0		
	2	1	0	0	0	0	20		
	3	1	0	0	1	0	40		
	4	1	0	0	1	0	40		
	5	1	0	0	1	0	40		
	6	1	0	0	1	0	40		
	7	1	0	0	0	0	20	28.5	2.25

Variables	Career/ Developmental Stages	Relevance Voting in Round 4 Participants 1	2	3	4	5	% of Relevance	Group Mean %	Dollar Voting in Round 3 mean=6.2
Access to Major Clinical & Education Resource	1	1	1	1	1	0	80		
	2	1	1	0	1	0	60		
	3	1	1	1	1	0	80		
	4	1	1	1	1	0	80		
	5	1	1	1	1	0	80		
	6	1	1	1	1	0	80		
	7	1	1	1	1	0	80	77.1	4.45
Non Nursing Employment	1	1	0	1	0	0	40		
	2	0	0	1	0	0	20		
	3	0	0	0	0	0	0		
	4	1	0	0	0	0	20		
	5	1	0	0	0	0	20		
	6	0	0	0	0	0	0		
	7	0	0	0	0	0	0	14.3	2.425
Professional Involvement	1	0	1	0	1	1	60		
	2	1	1	1	1	1	100		
	3	1	1	1	1	1	100		
	4	1	1	1	1	1	100		
	5	1	1	1	1	1	100		
	6	1	1	1	1	1	100		
	7	1	1	1	1	1	100	94.3	6.85
Family Involvement	1	0	0	1	1	0	40		
	2	0	0	1	1	0	40		
	3	0	0	1	1	0	40		
	4	0	0	1	1	0	40		
	5	0	0	1	1	0	40		
	6	0	0	1	1	0	40		
	7	0	0	1	1	0	40	40	3.5625

PART 1

In the following table, please rate the characteristics of variables submitted by participants, in terms of their importance in describing the specific variable and developmental stage, by inserting a tick.

1 = Not important

2 = Slightly important

3 = Important

4 = Most important

Career/ Developmental Stages	Variables	Characteristics	4	3	2	1
Beginning Practitioner	Physical Age	20–50 years				
	Sex	Male Female				
	Years of Service/ Experience	0–2 years 0–3 years 0–4 years				
	Level of Position	Team member of restricted role Junior position 1st–5th year RN				
	Nature of Position	Ward situation Speciality area Collaborative Nursing [illegible]				
	Setting in Which position Held	Hospital Community Corporation/Co setting				
	Education & Academic Awards	Certificate Diploma Degree Tertiary qualifications Post basic course Personal development included in qualification				
	Nursing Qualification	First registration as RN Post basic qualifications Speciality				
	Geographic Location of Work	Opportunity for range of experience				
	Access to Clinical & Education Resources	Library College Over 50 km away Knowledge of future career pathway				
	Non Nursing Employment	Part time work Personal Development				
	Professional Membership	Membership Stimulation of others Professional and union involvement Nursing organisation				
	Family Involvement	Dependant spouse Degree of commitment to professional				
Developing Practitioner	Physical Age	25–30 years 20–50 years				
	Sex	Male Female				
	Years of Service Experience	Minimum of 3 years Development of specialist skills Minimum of 5 years				
	Level of Position Held	RN Charge Nurse Senior nurse in team Opportunity for responsibility				
	Nature of Position	Responsibility increased beyond beginner				

Career/ Developmental Stages	Variables	Characteristics	4	3	2	1
	Setting in Which Position Held	Opportunity to develop Specialist higher order skill Private Hospital Public Hospital Collaborative Team				
	Education/ Academic Awards	Tertiary Post-grad work Studying or completing further qualification Personal development Certificate Diploma Degree				
	Nursing Qualification	Additional nursing qualification Post basic awards				
	Geographic Location of Work	Access to unit offering specialist care 20-50 km				
	Place of Residence	Ability to seek centre that most meets need for professional development				
	Access to Clinical/ Education Resource	Library College Encouragement by employer Time off from work				
	Professional Involvement	Member on Committee Stimulation of profession				
	Family Involvement	Commitment to professional role Dependants Spouse				
Experienced Practitioner	Physical Age	Over 30 years				
	Sex	Male Female				
	Years of Service/ Experience	Over 10 years Over 30 years Over 5 years				
	Level of Position Held	Charge Nurse Supervisor Director of Nursing Team Leader Senior position in clinical Senior position in education				
	Nature of Position	Clinical area Administration Education Research				
	Setting in Which Position Held	Private Public Opportunity for experience that extends skill levels				
	Education/ Academic Awards	Degree Diploma Certificate Management oriented study				
	Nursing Qualification	Post basic Registered Nurse Updated Certificate				

Career/ Developmental Stages	Variables	Characteristics	4	3	2	1
	Geographic Location of Work	Over 100 km Access to clinical and education facilities Near to place of home and study				
	Place of Residence	Possibility of career mobility to enhance professional development Close to work and study				
	Access to Major Clinical & Education Resources	Ability to develop further skills Time off to attend available education centres 10–30 km away 31–50 km away				
	Professional Involvement	Membership Executive position Stimulation of peers and professional leader				
	Family Involvement	Increasing time with family				
Clinical Practitioner Role	Physical Age	Above 25 years				
	Sex	Male Female				
	Years of Service	3 years plus 5–10 years 10–15 years 15–20 years				
	Level of Position	Patient Centre Non administrative Able to exert influence over decisions relating to patient care				
	Nature of Position	Consultant Ward Nurse Community Nurse				
	Setting in Which Position Held	Speciality ward General ward Opportunity to use and extend existing skills Hospital Community				
	Education/ Academic Awards	Certificate Diploma Degree				
	Nursing Qualification	Registered Nurse Specialist post basic qualifications				
	Geographic Location of Work	Close to work Over 30 km Clinical areas providing resources for professional role & development				
	Place of Residence	Ability to select about employment Availability of recreation at home				
	Access to Major Clinical & Education Resources	Time available to study Course available College Library Ability to follow formal and informal study				
	Professional Involvement	Stimulation of other professional leaders Membership Executive member				

Career/ Developmental Stages	Variables	Characteristics	4	3	2
	Family Involvement	Dependants Spouse			
Education Role	Sex	Male Female			
	Years of Service/ Experience	Above 5 years 5–10 years 10–15 years Clinical credibility			
	Level of Position Held	Seen as having credibility and influence Clinical teacher Clinical preceptor			
	Nature of Position	Teacher Team leader			
	Setting in Which Position Held	Provide opportunity for teaching to occur Hospital Community Private hospital Public hospital College			
	Education/ Academic Awards	Tertiary qualification Certificate Diploma Degree Academic credibility			
	Nursing Qualification	Tertiary nursing qualification Registered nurse Specialist Post basic			
	Geographic Location	Access to resources to support teaching role Close to work			
	Place of Residence	Ability to be selective about employment Quiet and comfortable Much of work/preparation is done at home			
	Access to Major Clinical & Education Resources	Access to resources to support teaching role Library College Over 30 km Time available Course available			
	Professional Involvement	Active membership Executive Stimulation of peer and professional leaders			
	Family Involvement	Family relationship completed for time			
Administration Role	Physical Age	30–40 years 40–50 years			
	Sex	Male Female			
	Years of Service/ Experience	10–20 years 20–25 years 5 years plus			

Career/ Developmental Stages	Variables	Characteristics	4	3	2	1
	Level of Position Held	Ability to influence decisions, especially allocation of resources Change nurse Supervisor Director of Nursing Upward career path				
	Nature of Position Held	Autonomy Security Status Nursing administration, as distinct from general clerical work				
	Setting in Which Position Held	Opportunity for professional development Private hospital Public hospital Large institution				
	Education/ Academic Awards	Degree in administration or similar Personal development, wider vision Tertiary Certificate Diploma Degree				
	Nursing Qualification	Tertiary nursing award Post basic qualification				
	Geographic Location of Work	Opportunity for personal development City Country Close to work				
	Place of Residence	Ability to select employment Suitable for entertaining				
	Access to Major Clinical & Education Resources	Library Tertiary institution Continuing professional development				
	Professional Involvement	Stimulation of interaction with peers and professional leaders Membership(s) professional organisation Executive Active involvement				
	Family Involvement	Child rearing responsibilities essentially complete (for time being)				
Consultancy Role	Years of Service	Credibility in the field 5 years plus 15–20 years				
	Level of Position	Senior position Ability to influence decisions				
	Nature of Position	Consultancy as primary role Experience in particular area Specialist				
	Setting in Which Position Held	Diversity and depth of experience Community Private hospital Public hospital				
	Education/ Academic Awards	Tertiary Certificate Diploma Degree				

Career/ Developmental Stages	Variables	Characteristics	4	3	2	1
	Nursing Qualification	Professional credibility Teaching nursing award Post basic Specialist				
	Geographic Location	Diversity and depth of experience				
	Place of Residence	Ability to be selective about place of employment				
	Access to Major Clinical & Education Resources	Remain current in professional field Library College Time off work				
	Professional Involvement	Interaction with peers and professional leaders Member of professional organisation Executive				

PART 2

In the following list, please find the most important variable and give it a rating of 100. Please rate the other variables in term of the most important one, so that a variable which you feel is half as important as the most important is to receive a rating of 50.

Variables	Rating
1. Physical Age	
2. Sex	
3. Years of Service/Experience	
4. Level of Position Held	
5. Nature of Position Held	
6. Setting in Which Position Held	
7. Education and Academic Award	
8. Nursing Qualification	
9. Geographic Location of Work	
10. Place of Residence	
11. Access to Major Clinical and Education Resources	
12. Non Nursing Employment	
13. Professional Involvement (Committee, Association)	
14. Family Involvement	

PART 3

In this table below, please rate the career/development stages in the appropriate Importance Scale and Confidence Scale Columns. By inserting a tick (/). (The Scoring will be computed as follows: the career/developmental stage you indicate Very Important will be given (4) points; the Important will be given (3) points and so forth. Similar scoring method will be applied to the Confidence Scale).

CAREER/DEVELOPMENTAL STAGES IN THE PROFESSIONAL NURSE	IMPORTANCE				CONFIDENCE			
	VERY IMPORTANT	IMPORTANT	SLIGHTLY IMPORTANT	UNIMPORTANT	CERTAIN	MOSTLY RELIABLE	RISKY	UNRELIABLE
1. Beginning Practitioner								
2. Developing Practitioner								
3. Experienced Practitioner								
4. Stage 1 (1–2 yrs after Grad.)								
5. Stage 2 (2–5 yrs after Grad.)								
6. Stage 3 (5 yrs onwards after Graduation)								
7. Clinical Practitioner Role								
8. Education Role								
9. Administration Role								
10. Consultancy Role								
11. Mentor								
12. Learner/Student Stage								
13. Dependency/New Graduate Stage								
14. Conformity Stage								
15. Comfortable/Independent Stage								
16. Static (Resistant to change) Stage								

1. Do you feel you have made useful contributions to the Delphi?

2. Do you feel the Delphi has been a success and that it is achieving what it set out to do?

3. Do you have any suggestions on how this Delphi could be run better?

4. Questions you would like to ask other participants, or comments you would like to make.

APPENDIX A6

4th October, 1986

Dear

As 80% of the participants on Round voted for the Delphi to end, that (in accordance with previous decision), made it the last round.

The following comments were given in support of this voting:

> "After 5 rounds, I feel I am constantly repeating myself and going around the circle."
>
> "I think that unless there are significant changes in the information gathered in this round, the study should be concluded."
>
> Sorry, but I don't see fast enough development. Too much repetitive effort."
>
> "Enough information."
>
> "I don't know. I believe you can best decide this. Do you have sufficient useful information?"

In order to conclude the Delphi, I would be grateful if you could complete the post-Delphi evaluation questionnaire and return it to me by

As promised in Round 1, I am also returning to you a summary of the results for both variables and career/developmental stages voting.

The Delphi commenced in April and terminated in September 1986. I would like to take this opportunity to thank you for your time, effort and interest in responding to the Delphi questionnaire and in supporting by trial study.

Yours sincerely,

Felix Yuen.

POST-DELPHI EVALUATION QUESTIONNAIRE

Please Answer the Following Questions.

1. If I had the opportunity to participate in another Delphi, I would.

   YES _____ NO _____

2. Do you feel the Delphi has produced meaningful career/developmental stages, thier variables and characteristics that will provide direction for continuous nursing education planning?

   _____
   _____
   _____
   _____

3. Which part of the Delphi have you found most interesting? (Career/Developmental Stages, Variables, Characteristics, Responses to questions, etc.).

   _____
   _____
   _____
   _____

4. Which parts of the Delphi have you liked the least?

   _____
   _____
   _____
   _____

5. Has there been anything about the Delphi that has surprised you?

   YES _____ NO _____

   If yes, please specify.

   _____
   _____
   _____

6. What key issues do you feel the Delphi has helped identify?

   _____
   _____
   _____
   _____

7. Do you have any other comments you would like to make, or questions you would like to ask?

   _____
   _____
   _____
   _____

ROUND 5 — VARIABLES VOTING AT THIRD TESTING

VARIABLES	Magnitude Estimation Voting in Round 5 Participants					Magnitude Estimation Voting in Round 5 (Mean %)	Relevance Voting in Round 4 (Mean %)	Dollar Voting in Round 3 (Mean = 6.25)
	1	2	3	4	5			
1. Physical Age	10	50	10	75	45	38	28.5	5.425
2. Sex	10	0	10	75	35	25	20	3.85
3. Years of Service/ Experience	60	80	80	75	75	74	85.7	10.85
4. Level of Position Held	70	70	80	100	95	83	85.7	10.85
5. Nature of Position Held	70	90	80	100	100	88	68.5	8.87
6. Setting in which Position Held	20	70	50	50	90	56	77.1	4.225
7. Education and Academic Awards	100	100	60	100	85	89	88.5	11.95
8. Nursing Qualifications	100	90	100	75	80	89	100	12.25
9. Geographic Location of Work	30	30	30	30	30	55	48.5	4.825
10. Place of Residence	20	10	20	30	50	26	28.5	2.25
11. Access to Major Clinical and Education Resource	50	20	20	50	70	42	77.1	4.45
12. Non—Nursing Employment	20	10	20	10	30	18	14.3	2.425
13. Professional Involvement (Committee,Association)	60	40	70	25	65	52	94.3	6.85
14. Family Involvement	20	30	20	75	40	37	40	3.625

ROUND 5: IMPORTANCE AND CONFIDENCE SCALES AT SECOND TESTING

CAREER/DEVELOPMENTAL STAGES IN THE PROFESSIONAL NURSES	Importance Scale Participant							Confidence Scale Participant						
	1	2	3	4	5	Total Score	mean (n=5)	1	2	3	4	5	Total Score	mean (n=5)
1. Beginning Practitioner	4	3	4	3	4	18	3.6	4	4	2	4	4	18	3.6
2. Developing Practitioner	4	3	4	3	4	18	3.6	4	4	3	4	4	19	3.8
3. Experienced Practitioner	4	3	4	3	4	18	3.6	4	4	3	4	4	19	3.8
4. Stage 1 (1–2 years after Graduate)	1	1	4	2	4	12	2.4	2	1	3	1	2	9	1.8
5. Stage 2 (2–5 years after Graduate)	1	3	4	2	2	12	2.4	2	2	3	1	2	10	2
6. Stage 3 (5 years onwards after Graduate)	1	2	4	2	2	11	2.2	2	3	3	1	2	11	2.2
7. Clinical Practitioner	2	3	4	4	2	15	3	2	2	3	2	2	11	2.2
8. Education Role	2	2	2	3	2	11	2.2	2	3	4	2	2	13	2.6
9. Administration Role	2	3	3	3	2	13	2.6	2	3	2	2	2	11	2.2
10. Consultancy Role	2	2	2	3	2	11	2.2	2	3	4	2	2	13	2.6
11. Mentor	1	4	2	3	2	12	2.4	1	4	4	2	1	12	2.4
12. Learner/Student Stage	1	2	4	4	1	12	2.4	2	1	1	4	1	9	1.8
13. Dependence/New Graduate Stage	1	3	4	4	3	15	3	1	2	3	4	2	12	2.4
14. Conformity Stage	2	2	4	2	1	11	2.2	1	2	3	3	1	10	2
15. Confortable/Independent Stage	2	2	4	3	2	13	2.6	1	3	4	3	2	13	2.6
16. Static (Resistant to Change) Stage	2	1	4	2	1	10	2	1	1	2	3	1	8	1.6

SUMMARY OF VARIABLES VOTING RESULTS AT VARIOUS ROUND

VARIABLES	Magnitude Estimation Voting in Round 5 (Mean %)	Relevance Voting in Round 4 (Mean %)	Dollar Voting in Round 3 (Mean = 6.25)
1. Physical Age	38	28.5	5.425
2. Sex	25	20	3.85
3. Years of Service/Experience	74	85.7	10.85
4. Level of Position Held	83	85.7	10.85
5. Nature of Position Held	88	68.5	8.85
6. Setting in which Position Held	56	77.1	4.225
7. Education and Academic Awards	89	88.5	11.95
8. Nursing Qualifications	89	100	12.25
9. Geographic Location of Work	55	48.5	4.825
10. Place of Residence	26	28.5	2.25
11. Access to Major Clinical and Education Resource	42	77.1	4.45
12. Non-Nursing Employment	18	14.3	2.425
13. Professional Involvement (Committee, Association)	52	94.3	6.85
14. Family Involvement	37	40	3.625

SUMMARY OF CAREER/DEVELOPMENTAL STAGE VOTING RESULTS AT THE FIRST AND SECOND TESTING

CAREER/DEVELOPMENTAL STAGES IN THE PROFESSIONAL NURSES	Importance Scale Mean Score (n = 5)		Confidence Scale Mean Score (n = 5)	
	First Round	Second Round	First Round	Second Round
1. Beginning Practitioner	3	3.6	3.4	3.6
2. Developing Practitioner	3.6	3.6	3.66	3.8
3. Experienced Practitioner	3.2	3.6	3.8	3.8
4. Stage 1 (1–2 years after Graduate)	2.2	2.4	2.8	1.8
5. Stage 2 (2–5 years after Graduate)	2.4	2.4	3	2
6. Stage 3 (5 years onwards after Graduate)	2.4	2.2	2.8	2.2
7. Clinical Practitioner	3.4	3	2.8	2.2
8. Education Role	3.4	2.2	3	2.6
9. Administration Role	3.4	2.6	3	2.2
10. Consultancy Role	3.4	2.2	2.8	2.6
11. Mentor	3.2	2.4	2.4	2.4
12. Learner/Student Stage	2.4	2.4	2.8	1.8
13. Dependence/New Graduate Stage	2.8	3	2.4	2.4
14. Conformity Stage	2.4	2.2	2.4	2
15. Confortable/Independent Stage	3.2	2.6	2.4	2.6
16. Static (Resistant to Change) Stage	3.2	2	2.4	1.6

APPENDIX B

THE CONTINUING NURSING EDUCATION PREFERENCES INVENTORY

APPENDIX B1

Continuing Nursing Education Preferences Inventory

The aim of this exercise is to develop an Inventory of items that would be both appropriate and efficient in any attempt to research nurses' interests about their continuing educational needs beyond their pre-service qualifications.

In responding to each statement, please go through the following steps:

1. Read the statement carefully.

2. Think about how relevant the statement is to your present career stage. (Note that we are checking the relevance of the item/statement, not whether you should agree or disagree with it.)

3. Indicate your answer by ticking (√) the appropriate column:

   Highly preferred - if you consider the item is highly relevant.
   Preferred - if you consider the item is relevant.
   Not Sure - if you do not know the answer.
   Not Preferred - if you consider the item is irrelevant.
   Highly Not Preferred - if you consider the item is highly irrelevant.

Possible items for Continuing Nursing Education should include:	HIGHLY NOT PREFERRED	NOT PREFERRED	NOT SURE	PREFERRED	HIGHLY PREFERRED
1. Further knowledge in nursing.					
2. Advanced nursing technique.					
3. Ward management and organization.					
4. Statutory requirements and hospital policies.					
5. Supervision of junior staff.					
6. Nursing audits.					
7. Communication technique.					
8. Interpersonal/Interprofessional skills.					
9. Group dynamics.					
10. Effective use of resources.					
11. Extended role of nurses.					
12. Specialization in nursing.					
13. Innovations and changes in nursing.					
14. Career opportunities in New South Wales.					
15. Personal career development programme.					
16. Nurses Award in the New South Wales hospitals.					
17. Job specification.					
18. Nursing philosophy.					
19. Legal aspect of nursing.					
20. Professional and Industrial organization.					
21. Professional rights and obligations.					
22. Adjustment to new role demand.					
23. Setting personal goals.					
24. Coping with social pressures.					

APPENDIX B2

Continuing Nursing Education Preferences Inventory: Total Scores Obtained by Each Subject

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item 1	2	5	4	4	5	5	5	5	5	5	5	5	4	5	4
2	2	5	4	4	4	5	5	5	5	5	5	5	4	5	2
3	4	4	4	5	5	5	5	5	5	4	5	2	5	4	4
4	5	5	4	5	5	4	5	5	5	5	5	5	5	5	4
5	5	5	4	4	4	4	5	5	5	5	4	4	4	4	4
6	4	5	3	4	4	4	3	5	4	4	3	5	4	4	3
Sub-total	22	29	23	26	27	27	28	30	24	28	27	26	26	27	21
7	4	4	4	4	5	5	5	5	4	5	5	5	3	5	4
8	3	4	3	4	3	4	2	4	3	4	4	4	2	3	4
9	4	4	4	5	5	4	2	4	3	4	4	5	3	3	4
10	4	4	3	5	5	4	4	5	4	4	5	4	4	4	4
11	4	4	4	4	5	4	4	5	5	4	5	5	3	4	4
12	5	4	3	4	5	4	5	5	5	3	5	5	4	4	4
Sub-total	24	26	21	26	28	25	22	28	24	24	28	28	19	23	24
13	5	5	2	5	4	2	3	5	5	4	5	5	5	4	4
14	5	5	4	4	4	4	3	5	5	4	5	5	5	4	4
15	5	3	5	4	5	4	4	5	5	4	5	5	4	4	5
16	4	4	4	4	4	4	3	5	5	4	4	4	5	4	3
17	4	5	5	4	5	4	3	4	4	5	5	5	5	4	4
Sub-total	23	22	20	17	22	14	16	24	24	21	24	24	24	20	20
18	3	4	4	4	5	4	3	5	5	4	5	4	5	4	4
19	4	4	5	4	5	4	3	5	5	4	4	4	4	4	4
20	4	4	5	3	5	2	2	5	3	3	4	4	4	3	4
21	4	5	4	4	5	4	4	5	4	5	5	5	4	4	4
Sub-total	15	17	18	17	20	14	12	20	17	16	18	17	17	15	16
22	4	5	5	4	4	4	5	5	5	4	5	5	4	4	4
23	5	5	5	4	5	4	2	5	4	4	5	5	4	4	4
24	4	5	5	5	5	4	2	5	4	5	4	5	4	4	4
Sub-total	13	15	15	13	14	12	9	15	13	13	14	15	12	12	12
TOTAL	97	107	97	99	107	98	85	117	102	102	111	110	98	97	83
%	80.8	89.1	80.8	82.5	89.1	81.6	70.8	97.5	85	85	92.5	91.6	81.6	80.8	69.1

Continuing Nursing Education Preferences Inventory

Total Scores Obtained by Each Student

Subjects

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item 1	5	5	5	5	4	5	5	5	4	5	5	4	5	5	4
2	4	5	5	5	5	5	5	5	5	5	5	4	4	5	4
3	4	5	4	4	4	4	5	5	5	5	5	4	4	5	3
4	5	5	5	5	5	5	5	5	3	4	5	5	5	5	4
5	4	4	4	4	4	3	4	4	3	4	5	5	5	4	4
6	4	5	4	5	4	3	4	3	3	3	5	5	5	5	5
Sub-total	26	29	27	28	26	25	28	27	23	26	25	27	28	29	24
7	4	3	4	5	5	4	2	3	4	5	5	5	2	4	4
8	2	4	3	4	4	3	2	3	3	3	4	5	3	3	4
9	4	2	3	4	3	2	2	3	4	4	4	5	4	3	4
10	5	4	4	4	4	4	2	4	4	5	5	5	4	4	4
11	5	2	5	4	3	4	4	4	4	4	4	5	3	4	4
12	5	4	5	4	4	4	4	4	3	5	5	5	5	4	3
Sub-total	25	17	24	25	23	21	16	21	22	26	27	30	21	20	23
13	4	5	5	5	5	4	4	4	5	4	5	5	5	5	4
14	5	5	5	5	5	4	4	4	5	5	5	4	5	4	4
15	4	4	5	5	5	4	5	4	5	4	5	4	5	4	5
16	4	5	5	4	4	4	5	4	5	3	5	5	4	4	4
17	4	5	5	4	4	4	5	4	4	4	5	5	5	4	5
Sub-total	21	24	25	23	23	20	23	20	24	20	25	23	24	25	22
18	4	5	5	5	4	3	5	4	4	3	5	5	4	4	4
19	4	5	4	5	4	3	4	2	4	4	5	5	4	3	4
20	5	2	4	4	3	2	4	2	3	3	5	5	4	3	2
21	4	4	5	4	5	4	4	4	5	4	5	5	5	4	4
Sub-total	17	16	18	18	16	12	17	12	16	14	20	20	17	14	14
22	4	5	5	4	5	4	4	4	4	3	5	5	4	4	4
23	5	4	4	5	5	4	4	4	3	3	4	5	5	4	4
24	4	5	4	5	5	4	4	5	3	4	4	5	5	4	5
Sub-total	13	14	13	14	15	12	12	13	10	10	13	15	14	12	13
TOTAL	102	100	107	108	103	90	100	93	95	96	110	115	104	100	96
%	85	83.3	89.1	90	85.8	75	83.3	77.5	79.1	80	91.6	95.8	86.6	83.3	80

Continuing Nursing Education Preferences Inventory

Total Scores Obtained by Each Student

Subjects

	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Item 1	5	5	4	5	5	5	4	5	5	5	5	3	5	4	4
2	5	4	3	5	4	5	4	5	4	4	5	4	5	5	3
3	2	4	3	4	4	4	4	5	3	5	4	3	4	2	3
4	4	4	5	4	4	4	5	5	5	4	2	5	3	3	4
5	5	5	3	4	4	5	4	5	3	4	5	5	5	4	4
6	4	4	5	5	4	5	4	5	3	5	5	3	5	3	3
Sub-total	25	26	23	27	25	28	25	30	23	27	26	23	27	21	21
7	5	4	4	4	5	5	4	5	4	4	4	4	5	3	4
8	4	4	5	4	4	4	3	4	3	3	4	4	4	3	3
9	5	3	3	4	5	3	3	4	3	4	4	2	5	3	4
10	5	3	4	5	5	4	4	3	3	5	3	3	5	3	4
11	5	5	4	4	4	5	5	4	4	4	4	4	4	4	4
12	4	5	3	4	5	5	5	4	4	3	5	4	5	3	4
Sub-total	28	24	23	25	28	26	24	24	21	23	24	21	28	19	23
13	4	4	5	4	4	4	5	5	3	4	4	5	5	4	4
14	4	5	4	3	4	4	5	5	3	4	3	4	4	2	4
15	5	5	5	5	4	4	5	5	4	4	3	4	5	4	5
16	4	5	4	4	5	4	4	4	3	4	3	3	5	4	4
17	5	5	4	4	4	4	4	5	4	4	3	4	5	4	4
Sub-total	22	24	22	20	21	20	23	24	17	20	16	20	24	14	21
18	4	4	3	4	4	5	5	4	4	5	5	4	5	3	3
19	3	4	4	5	3	4	4	5	4	4	4	2	5	2	4
20	4	3	4	4	4	4	4	4	4	4	5	2	3	3	4
21	5	4	3	4	4	4	4	5	5	3	3	4	4	4	4
Sub-total	16	15	14	17	15	17	17	18	17	16	17	12	17	12	15
22	5	4	4	3	5	4	4	4	5	4	4	4	4	2	4
23	5	4	4	4	4	5	4	5	4	4	4	5	5	4	4
24	5	5	4	4	4	4	4	4	4	5	5	4	5	4	4
Sub-total	15	13	12	11	13	13	12	13	13	13	13	13	14	10	12
TOTAL	106	102	94	100	102	104	101	99	93	99	96	89	110	76	92
%	88.3	85	78	83.3	85	86.6	84.1	82.5	77.5	82.5	80	74.1	91.6	63.3	76.6

Continuing Nursing Education Preferences Inventory

Total Scores Obtained by Each Subject

Subjects

		46	47	48	49	50				
Item	1	4	4	4	5	5		=	220	
	2	4	4	4	5	5		=	223	
	3	4	5	3	3	4		=	202	
	4	4	3	4	5	4		=	204	
	5	5	3	4	5	5		=	214	
	6	4	5	3	5	5		=	210	
Sub-total		25	24	22	28	28	Σ Sub-total	=	1293	Mean = 25.86 S.D. = 2.59, S.E. = 0.37
	7	4	5	5	5	4		=	205	
	8	3	5	5	4	5		=	200	
	9	4	4	4	3	4		=	203	
	10	4	4	4	3	3		=	202	
	11	5	4	5	4	3		=	200	
	12	4	5	4	4	4		=	205	
Sub-total		24	27	27	23	23	Σ Sub-total	=	1215	Mean = 23.9 S.D. = 2.99, S.E. - 0.42
	13	4	5	4	5	4		=	216	
	14	3	4	5	5	4		=	207	
	15	4	4	5	5	4		=	194	
	16	5	4	4	5	4		=	208	
	17	4	4	4	4	4		=	211	
Sub-total		20	21	22	24	20	Σ Sub-total	=	1006	Mean = 20.1 S.D. = 3.03, S.E. = 0.43
	18	5	4	4	5	4		=	211	
	19	4	4	3	4	5		=	196	
	20	3	5	4	4	4		=	194	
	21	5	5	4	4	4		=	214	
Sub-total		17	18	14	17	17	Σ Sub-total	=	775	Mean = 15.5 S.D. = 2.18, S.E. = 0.3
	22	5	4	5	5	5		=	215	
	23	4	4	3	4	4		=	227	
	24	4	4	4	4	5		=	213	
Sub-total		13	12	12	13	14	Σ Sub-total	=	655	Mean = 13.1 S.D. = 1.4, S.E. = 0.14
TOTAL		99	102	97	105	102	Σ Total	=	4924	Mean = 98.48
%		82.5	85	80.8	87.5	85				

APPENDIX B3

Continuing Nursing Education Preferences Inventory: The Split Halves Reliability of the Scores

Computation

	Scores of Odd No. Items X	Scores of Even No. Items Y	Deviation from Mean x	y	x^2	y^2	xy
	220	223	14	18.7	196	349.69	261.8
	202	204	-4	-0.3	16	-0.09	1.2
	214	210	8	5.7	64	32.49	45.6
	205	200	-1	-4.3	1	18.49	4.3
	203	202	-3	-2.3	9	5.29	6.9
	200	205	-6	0.	36	0.49	-0.42
	216	207	10	2.7	100	7.29	27
	194	208	-12	3.7	144	13.69	-44.4
	211	211	5	6.7	25	44.89	33.5
	196	194	-10	-10.3	100	106.09	103
	214	215	8	10.7	64	114.49	85.6
	227	213	21	8.7	441	75.69	182.7
Total =	2472	2452			1707 (Σx^2)	768.68 (Σy^2)	800 (Σxy)
Mean =	206	204.3					

Split-Halves Reliability correlation (r)

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 - \Sigma y^2}} = \frac{800}{\sqrt{1707 \times 768.68}}$$

$$= \frac{800}{\sqrt{1310976}} = \frac{800}{1144.9} = 0.69$$

Spearman-Brown Prophecy Formula (R)

$$R = \frac{2r}{1+r} = \frac{2 \times 0.69}{1+0.69} = \frac{1.38}{1.69} = 0.81$$

APPENDIX B4

Continuing Nursing Education Preferences Inventory: Scores of Top 27% and Bottom 27% of Subjects

1. Top 27% Subjects.
N = 13.

		Subjects														
		1	2	3	4	5	6	7	8	9	10	11	12	13	Total	%
Item	1	5	5	4	5	5	5	5	5	5	5	5	5	5	64	98
	2	5	5	4	5	4	5	5	5	5	5	5	5	4	62	95
	3	5	5	4	4	5	4	4	4	5	4	4	3	4	55	85
	4	5	5	5	5	5	5	5	5	5	4	3	5	5	62	95
	5	5	4	5	5	4	4	4	4	5	5	5	5	5	60	92
	6	5	3	5	5	4	5	4	5	5	4	5	5	5	60	92
	7	5	5	5	4	5	5	4	5	5	5	5	5	3	61	94
	8	4	4	5	4	3	4	5	4	5	4	4	4	3	55	85
	9	4	4	5	4	5	5	3	4	4	5	5	3	4	55	85
	10	5	5	5	4	5	4	4	4	5	5	5	3	4	58	89
	11	5	5	5	4	5	5	5	4	4	5	4	4	3	58	89
	12	5	5	5	4	4	5	5	4	5	4	5	4	5	60	92
	13	5	5	5	5	4	5	5	5	5	4	5	5	5	63	97
	14	5	5	4	5	4	5	5	5	5	4	4	5	5	61	94
	15	5	5	4	3	5	5	5	5	5	5	5	5	5	62	95
	16	5	4	5	4	4	4	5	4	5	4	5	5	4	58	89
	17	4	5	5	5	5	5	5	4	5	5	5	4	5	62	95
	18	5	5	5	4	5	4	5	5	5	4	5	5	4	61	94
	19	5	4	5	4	5	4	4	5	5	3	5	4	4	57	88
	20	5	4	5	4	5	4	4	4	5	4	3	4	4	65	86
	21	5	5	5	5	5	5	5	4	5	5	4	4	5	62	95
	22	5	5	5	5	4	5	5	4	5	5	4	5	4	61	94
	23	5	5	5	5	5	5	4	5	4	5	5	4	5	62	95
	24	5	4	5	5	5	5	4	5	4	5	5	4	5	61	94
TOTAL		117	111	115	107	107	110	107	108	115	106	110	105	104		

2. Bottom 27% Subjects.
N = 13.

		Subjects														
		1	2	3	4	5	6	7	8	9	10	11	12	13	Total	%
Item	1	5	4	5	5	4	4	3	3	3	3	3	4	3	49	75
	2	5	4	5	5	5	3	4	3	4	5	3	2	4	45	65
	3	5	3	4	5	5	3	3	3	3	4	5	3	2	48	69
	4	4	4	2	5	3	5	5	4	5	3	3	3	3	49	75
	5	4	4	5	4	3	3	3	4	5	3	3	4	4	49	75
	6	3	5	5	3	3	5	3	3	3	3	3	3	5	47	72
	7	5	4	4	3	4	4	4	4	4	4	2	4	3	49	75
	8	3	4	4	3	3	5	3	3	4	3	2	4	3	44	67
	9	4	4	4	3	4	3	3	4	2	2	2	4	3	40	61
	10	5	4	3	4	4	4	3	4	3	4	4	4	3	46	70
	11	4	4	4	4	4	4	4	4	4	4	4	4	4	42	64
	12	5	3	5	4	3	3	4	4	4	4	5	4	3	41	63
	13	4	4	4	4	5	5	3	4	5	4	3	2	4	51	78
	14	5	4	3	4	5	4	3	4	4	4	3	3	2	48	69
	15	4	5	3	4	5	5	4	5	4	4	4	2	4	53	81
	16	3	4	3	4	5	4	3	4	3	4	3	3	4	49	75
	17	4	5	3	4	4	4	4	4	4	4	3	4	2	47	72
	18	3	4	5	4	4	3	4	3	4	3	3	4	3	47	72
	19	4	4	4	2	4	4	4	4	2	3	3	4	2	44	67
	20	3	2	5	2	3	4	4	4	2	2	2	4	3	40	61
	21	4	4	3	4	5	3	5	4	4	3	4	4	4	54	83
	22	3	4	4	4	4	4	5	4	4	4	2	4	2	46	70
	23	3	4	4	4	3	4	4	4	5	2	2	4	3	44	67
	24	4	5	5	5	3	4	4	4	4	3	2	4	4	51	78
TOTAL		96	96	96	93	95	94	93	92	89	90	85	83	76		

APPENDIX C

CONTINUING NURSING EDUCATION AWARENESS INDEX

APPENDIX C1

CONTINUING NURSING EDUCATION AWARENESS INDEX

Introduction

The purpose of this questionnaire is to determine your awareness of various issues related to continuing nursing education. In this context, continuing nursing education consists of planned learning experiences beyond a basic nursing education program. Please mark the following items according to the degree of your agreement.

Thank you for your participation.

	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE
1. Nursing should direct more resources to continuing education.					
2. Continuing nursing education experiences are designed to enhance nursing practice.					
3. Nurses who are effective practitioners continue to learn on the job, but too often this is incidental, rather than planned.					
4. The future of continuing educational programs must be seen as purposeful, meaningful experiences for nurses.					
5. In nursing, there should be a commitment to life-long learning.					
6. The rapid changes in the delivery of health care have made continuing education essential for every practising nurse .					
7. Continuing education should answer the need of the organisation as well as personal and professional development of the nurse.					
8. It is important to have a process of identifying and communicating continuing education needs of nurses.					
9. Nurses should be allowed to implement changes in the work situation based on new knowledge gained from continuing education.					
10. Graduation from the basic nursing program marks only the beginning of a life-long learning process.					
11. Continuing nursing education should be mandatory.					
12. Continuing education is essential to quality performance in nursing.					
13. There should be evaluation for nurses who participate in continuing education programs.					
14. Continuing education for nurses should focus on their professional needs and personal concerns.					
15. Nurses should take the initiative in planning for their own continued learning.					
16. There should be practical encouragement from the employer for continuing education.					
17. The purpose of continuing education for nurses is to enable them to perform their job better.					
18. Continuing nursing education programs should be well publicised.					
19. The nurse as an adult learner has unique educational needs.					
20. Nurses must share the responsibility with educators in recognising the value of continuing education.					
21. It is important to have a formal organisation-based policy related to scheduling of continuing education.					
22. Existing continuing nursing education assists nurses very much in learning new roles and techniques.					

	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE
23. Existing continuing nursing education already includes a wide enough spectrum of educational activities.					
24. The nurse is motivated to come into continuing education as a result of experiencing problems in life generally.					
25. The nurse should determine his/her own objectives for learning in continuing education.					
26. The nurse should have a developmental profile which indicates their educational need.					
27. Continuing education aids self-development and professional growth.					
28. There should be established standards for continuing education in nursing.					
29. Learning climate must be supportive for the nurse to develop a concept of learning as a life-long activity.					
30. Nurses need to show more concern about the value of their learning activities.					
31. Continuing education should be available to all nursing personnel.					
32. Continuing education aims to promote individual responsibility and accountability of nurses for their life-long learning.					
33. In developing meaningful learning experiences, the curriculum developer must consider those concerns that tend to be the focal point at various career stages.					
34. Nursing administration must serve as a role-model in developing a working environment that is conducive to continue learning.					
35. Nurses have the responsibility to make personal educational needs known to the organisation.					
36. Achievement in continuing education should be recognised by the organisation for advancement purposes.					
37. Continuing education facilitates the integration of nursing science and nursing practice.					
38. There should be quality assurance criteria for continuing nursing curriculum.					
39. Nurses must be free to make their decision about participating in continuing education.					
40. Nurses should share knowledge gained from continuing education with peers.					

Are there any comments you wish to add:

APPENDIX C2

Continuing Nursing Education Awareness Index: The Split Halves Reliability of the Scores

Computation

	Scores of Odd No. Items X	Scores of Even No. Items Y	Deviation from Mean x	y	x^2	y^2	xy
	126	124	12.3	9.3	151.3	86.5	114.4
	108	123	-5.7	8.3	32.5	68.9	-47.3
	112	107	-1.7	-7.7	2.9	59.3	13.1
	121	122	7.3	7.3	53.3	53.3	53.3
	129	137	15.3	22.3	234.1	497.3	341.2
	84	124	-29.7	-9.3	882.1	86.5	276.2
	112	120	-1.7	5.3	2.9	28.1	-9
	120	131	6.3	17.3	39.7	299.3	109
	128	128	14.3	13.3	204.5	176.9	109
	116	110	2.3	-4.7	5.3	22.1	-10.8
	102	111	-11.7	-3.7	136.9	13.7	43.3
	102	76	-11.7	-38.7	136.9	1497.7	452.8
	102	97	-11.7	-17.7	136.9	313.3	207.1
	124	111	10.3	-3.7	106.1	13.7	-38.1
	123	110	9.3	-4.7	86.5	22.1	-43.7
	125	113	11.3	-1.7	127.7	2.9	-19.2
	108	109	-5.7	-5.7	32.5	32.5	32.5
	110	121	-3.7	6.3	13.7	39.7	-23.3
	117	115	3.3	0.3	10.9	0.09	0.99
	116	115	2.3	0.3	5.3	0.09	0.69
Total =	2273	2294			2389.5 (Σx^2)	3227.9 (Σy^2)	1564.1 (Σxy)
Mean =	113.7	114.7					

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \times \Sigma y^2}} = \frac{1564.1}{\sqrt{2389.5 \times 3227.9}} = \frac{1564.1}{\sqrt{7713067}}$$

$$= \frac{1564.1}{2772.4} = 0.56$$

Spearman-Brown Prophecy Formula:

$$R = \frac{2r}{1+r} = \frac{2 \times 0.56}{1.56} = 0.71$$

APPENDIX C3

Continuing Nursing Education Awareness Index: Scores of Top 27% and Bottom 27% of Subjects

1. Top 27% Subjects.
   N = 10.

		Subjects											
		1	2	3	4	5	6	7	8	9	10	Total	%
Item	1	4	4	3	3	4	4	4	4	4	4	38	76
	2	4	4	4	3	3	4	4	4	4	4	38	76
	3	4	3	3	4	3	3	3	4	3	3	33	66
	4	4	4	4	4	4	5	4	4	4	4	41	82
	5	4	4	4	3	2	4	4	4	4	3	36	72
	6	4	3	3	4	4	4	4	4	4	2	36	72
	7	3	5	4	4	4	4	4	3	2	4	37	74
	8	4	4	4	5	4	3	4	3	4	4	39	78
	9	4	4	4	4	5	4	4	4	4	5	42	84
	10	4	3	4	4	3	4	4	4	4	5	39	78
	11	3	3	3	2	3	4	4	3	3	2	30	60
	12	3	5	5	4	4	4	3	3	4	3	38	76
	13	3	4	4	4	4	4	4	4	2	2	35	70
	14	3	4	4	3	5	4	4	4	2	4	37	74
	15	2	4	3	5	3	5	4	3	3	3	35	70
	16	4	3	5	4	4	4	4	3	4	4	39	78
	17	4	4	4	4	4	4	3	3	4	4	38	76
	18	4	4	4	5	4	4	3	4	4	2	38	76
	19	3	3	3	4	4	5	4	4	4	3	37	74
	20	2	4	3	4	3	4	3	4	4	4	35	70
	21	5	4	4	4	3	3	3	3	4	4	37	74
	22	4	4	4	4	5	3	3	3	4	5	39	78
	23	2	4	4	4	4	2	5	2	4	2	33	66
	24	1	5	3	1	1	2	4	3	4	3	27	54
	25	3	4	4	3	2	3	3	2	2	5	31	62
	26	3	3	4	3	3	4	3	2	3	3	31	62
	27	4	4	3	4	4	4	3	3	3	4	36	72
	28	2	4	3	2	4	4	3	3	3	4	32	64
	29	3	4	4	3	5	4	4	3	3	4	37	74
	30	2	4	4	4	4	5	3	5	3	4	35	70
	31	4	4	4	4	4	3	4	4	4	4	39	78
	32	3	4	3	3	2	3	4	4	4	4	34	68
	33	3	3	4	3	4	3	3	4	4	4	35	70
	34	4	3	3	4	4	4	3	4	3	3	35	70
	35	3	3	3	3	4	4	4	3	4	4	35	70
	36	4	3	3	4	4	3	4	4	4	4	37	74
	37	4	3	4	4	4	4	4	3	3	4	37	74
	38	4	3	3	5	3	4	4	5	3	4	38	76
	39	4	3	4	3	4	3	4	4	3	4	36	72
	40	4	4	4	4	4	3	4	4	3	4	38	76
TOTAL		137	149	143	135	142	139	138	136	139	140		

1. Bottom 27% Subjects.
N = 10.

		Subjects											
		1	2	3	4	5	6	7	8	9	10	Total	%
Item	1	3	2	3	2	3	3	3	3	3	3	28	56
	2	3	2	3	2	2	2	3	3	2	3	25	50
	3	2	2	3	3	3	2	2	2	2	2	23	46
	4	2	3	2	4	4	3	3	4	4	3	32	64
	5	2	2	2	3	3	2	1	2	2	3	17	34
	6	3	2	3	2	2	2	1	4	2	3	24	48
	7	3	2	3	4	3	2	2	3	3	3	28	56
	8	3	3	2	2	3	2	3	3	3	3	27	54
	9	3	3	2	3	3	2	2	4	4	3	29	58
	10	2	3	2	2	3	2	3	3	4	3	27	54
	11	3	1	2	1	1	1	2	3	1	1	16	32
	12	2	2	3	3	2	3	2	2	2	1	22	44
	13	2	2	3	2	2	2	3	2	3	3	24	48
	14	2	2	2	2	3	2	3	3	3	3	25	50
	15	3	2	2	2	2	3	2	3	3	3	25	50
	16	3	2	3	2	4	4	3	3	3	3	30	60
	17	3	3	3	2	2	3	3	3	3	3	28	56
	18	2	3	3	3	4	3	3	2	3	3	29	58
	19	3	2	2	3	3	2	3	4	3	3	28	56
	20	2	2	2	3	2	2	3	2	2	3	23	46
	21	3	2	3	3	3	2	2	2	3	3	26	52
	22	3	2	3	3	4	3	3	3	3	3	30	60
	23	2	2	2	3	4	2	2	2	1	2	22	44
	24	1	2	2	1	2	1	2	2	1	2	16	32
	25	2	2	2	2	3	2	2	3	1	2	21	42
	26	2	2	3	2	1	2	2	2	2	2	20	40
	27	3	3	3	2	3	2	2	2	3	3	27	54
	28	3	2	3	2	3	2	2	2	2	3	24	48
	29	2	2	2	3	4	2	3	3	3	3	27	54
	30	2	2	2	3	4	2	2	3	2	3	25	50
	31	3	3	3	3	3	2	2	3	3	3	28	56
	32	1	2	3	3	3	2	1	3	3	2	23	46
	33	3	2	3	2	2	3	2	2	2	4	25	50
	34	1	2	2	3	3	3	2	2	3	1	22	44
	35	1	2	2	3	2	1	2	3	3	3	22	44
	36	3	2	3	3	3	2	2	3	3	3	27	54
	37	3	2	3	2	3	3	2	3	2	3	26	52
	38	3	2	3	5	3	3	2	2	3	3	29	58
	39	2	2	2	3	4	3	3	3	3	3	28	56
	40	2	2	2	2	3	2	3	3	1	3	23	46
TOTAL		83	99	89	102	104	114	98	112	105	111		

APPENDIX C4

Continuing Nursing Education Awareness Index: Total Scores Obtained by the Experimental Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
POLICY ISSUES																																							
Item 1	3	3	2	3	2	3	3	3	3	4	4	3	2	4	4	3	3	4	3	3	3	3	4	4	3	4	4	4	4	4	3	3	4	4	4	3	4	126	
6	2	3	2	3	2	2	1	4	2	4	4	3	4	1	3	3	1	2	3	3	4	3	4	4	2	3	3	4	4	4	3	4	4	4	2	4	3	107	
11	1	1	1	2	1	1	2	3	1	3	4	2	3	3	3	3	1	3	3	3	2	4	3	4	2	1	2	1	4	1	1	2	3	3	2	3	2	84	
16	4	3	2	3	5	4	3	3	3	4	3	4	4	4	3	3	4	2	5	4	4	3	4	4	4	4	3	4	4	4	3	3	3	4	4	3	3	131	
21	2	3	2	3	3	3	2	2	3	3	3	3	3	3	4	3	4	2	4	3	4	3	3	3	4	3	3	3	3	3	3	3	3	4	2	3	3	102	
26	2	2	2	3	2	1	2	2	2	3	2	2	3	2	3	2	3	2	4	3	3	3	3	4	4	3	2	3	3	3	2	3	2	3	3	3	3	97	
31	2	3	3	3	3	3	2	3	3	4	3	4	4	3	4	3	3	4	4	3	4	3	4	3	4	3	3	3	4	4	3	4	4	4	4	3	4	125	
36	2	3	2	3	3	3	4	3	3	4	4	4	3	3	3	3	3	3	3	3	4	3	4	3	4	3	3	4	4	4	4	4	4	4	4	3	3	121	Mean = 24.1
Sub-total	18	21	16	23	21	20	19	23	20	32	30	28	26	23	27	23	21	22	29	25	28	25	29	29	27	24	23	26	30	27	22	29	27	30	25	25	23	893	S.D. = 4.42
																																							S.E. = 0.27
AIMS OF LIFELONG LEARNING																																							
Item 2	2	3	2	3	2	2	3	3	2	4	3	3	3	4	4	3	3	3	4	3	3	3	3	4	3	4	3	4	4	4	3	3	4	4	4	3	4	124	
7	2	3	3	3	4	3	2	3	3	3	4	3	4	3	5	3	3	3	4	3	4	3	4	4	3	3	4	3	4	2	3	3	3	2	4	4	4	121	
12	3	2	2	3	3	2	2	2	2	3	3	3	3	3	5	3	3	3	5	4	4	4	4	4	2	3	3	4	3	4	1	3	3	4	3	3	3	114	
17	3	3	3	3	2	2	3	3	3	4	3	4	4	4	4	3	4	3	4	4	4	3	4	4	4	4	4	4	3	4	3	3	3	4	4	3	4	128	
22	3	3	2	3	3	4	3	3	3	4	4	4	4	3	4	3	4	3	4	3	4	3	3	3	3	3	4	3	3	2	3	3	3	4	2	2	2	111	
27	4	3	3	3	2	3	4	2	3	4	4	4	4	3	4	3	4	3	3	4	4	3	4	4	4	3	3	3	3	4	3	3	3	3	4	3	3	124	
32	2	1	2	3	3	3	1	2	3	3	3	4	4	3	4	3	3	3	3	3	3	3	2	3	4	3	3	3	4	4	2	2	4	4	4	3	3	113	
37	3	3	2	3	2	3	2	3	2	4	4	3	4	3	3	3	3	2	4	4	4	3	4	4	3	3	3	4	4	3	3	2	3	3	4	3	4	117	Mean = 25.7
Sub-total	22	24	19	24	19	22	20	21	21	29	28	28	30	24	33	24	26	23	31	28	30	25	28	30	26	26	27	28	28	26	21	22	26	28	29	24	27	952	S.D. = 3.8
																																							S.E. = 0.63
IMPLEMENTATION PROCESS																																							
Item 3	2	2	2	3	3	3	2	2	2	4	4	4	3	4	3	3	4	4	3	3	4	3	3	1	3	3	3	3	3	2	2	2	4	3	3	2	4	108	
8	2	3	3	2	2	3	3	3	3	4	3	4	4	3	4	3	3	3	4	3	5	3	4	3	4	3	3	3	4	4	3	3	3	4	4	3	4	122	
13	2	2	2	3	2	2	3	2	3	3	3	4	4	3	4	1	3	2	4	3	4	3	4	4	3	2	3	4	4	5	3	3	4	2	2	3	4	112	
18	3	2	3	3	3	4	3	3	3	4	3	4	4	2	4	3	5	4	4	5	5	3	4	4	3	4	4	3	3	4	3	3	4	4	2	3	3	128	
23	2	3	3	3	3	4	3	3	3	2	3	4	4	3	4	3	3	3	4	2	2	1	2	2	2	2	2	1	1	2	3	3	2	4	2	2	1	102	
28	2	3	2	3	2	3	2	2	2	2	4	3	4	3	4	3	3	2	3	3	2	3	4	4	4	3	3	3	3	4	3	3	3	3	4	3	4	111	
33	3	3	2	3	2	2	2	2	2	3	2	3	3	3	3	3	3	2	4	3	3	3	4	3	3	3	3	3	3	2	4	3	4	4	4	3	3	108	
38	3	3	2	3	5	3	2	2	3	4	4	3	4	3	3	3	4	3	3	3	2	3	3	4	3	2	3	3	4	3	3	3	3	3	3	3	4	115	Mean = 24.5
Sub-total	19	21	19	23	22	24	20	21	21	26	26	29	30	24	29	22	28	23	27	25	27	22	28	25	25	22	24	23	25	26	24	23	27	27	24	22	27	906	S.D. = 3.32
																																							S.E. = 0.55

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Experimental Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
LEARNING CLIMATE																																							
Item 4	3	2	3	2	4	4	3	4	4	4	3	4	4	4	4	3	4	4	4	3	4	3	4	3	3	3	3	4	4	3	3	3	4	4	4	3	5	123	
9	2	3	3	2	3	3	2	4	4	4	4	4	4	3	4	3	4	4	4	3	4	3	5	4	4	3	3	4	4	4	3	3	4	4	5	4	5	129	
14	2	2	2	2	2	3	3	3	3	3	3	4	4	3	4	3	3	3	4	4	3	3	5	4	3	3	3	4	4	5	3	3	4	2	4	3	4	120	
19	2	3	2	2	3	3	3	4	3	3	3	3	4	2	3	3	3	3	3	3	4	3	4	4	4	3	3	3	4	4	3	2	4	4	3	3	3	116	
24	1	1	2	2	1	2	2	2	1	1	2	2	3	2	5	3	1	2	3	2	1	1	1	2	3	2	2	2	1	2	2	3	3	4	3	2	2	76	
29	2	2	2	2	3	4	3	3	3	3	3	4	4	3	4	3	3	4	4	4	3	3	5	4	4	3	4	4	4	4	3	3	3	3	4	3	3	123	
34	3	1	2	2	3	3	2	2	3	4	3	4	2	3	3	3	3	2	3	3	4	3	4	4	4	3	2	4	3	4	1	2	4	3	3	3	4	109	
39	3	2	2	2	3	4	3	3	3	4	4	3	4	3	3	3	3	3	4	3	3	3	4	3	3	2	3	4	4	3	3	3	4	3	4	2	3	116	Mean = 24.7
Sub-total	18	16	18	16	22	26	21	25	24	27	25	28	29	23	30	24	27	25	29	25	26	21	32	28	28	22	23	29	28	29	21	22	30	27	30	22	29	912	S.D. = 4.13 S.E. = 0.68
INDIVIDUAL RESPONSIBILITIES																																							
Item 5	2	2	2	2	3	3	1	2	2	4	3	1	4	2	4	3	3	4	4	3	3	2	2	4	4	3	3	4	4	4	3	3	4	4	3	3	4	112	
10	2	2	3	2	2	3	3	3	4	4	4	4	4	2	3	3	4	3	4	4	4	3	3	4	4	3	5	4	4	4	3	3	4	4	5	3	4	137	
15	3	2	2	2	2	2	2	3	3	2	3	3	3	3	4	3	3	3	3	5	3	3	3	2	3	3	3	3	4	3	3	3	3	3	3	3	4	108	
20	2	2	2	2	3	2	3	2	2	2	3	3	3	3	4	2	4	3	3	4	3	2	3	4	3	3	3	3	3	4	3	3	4	4	4	3	3	110	
25	2	2	2	2	2	3	2	3	2	2	2	3	3	2	4	3	2	3	4	3	2	3	2	3	4	3	3	4	3	4	2	2	2	2	5	4	3	102	
30	2	2	2	2	3	4	2	3	2	2	3	3	3	3	4	3	3	2	4	4	3	4	4	3	4	3	3	3	3	3	3	3	2	3	4	2	4	110	
35	1	2	2	2	3	2	2	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	4	4	3	3	4	3	4	3	3	3	3	4	4	3	3	110	
40	2	3	2	2	2	3	3	3	1	4	4	3	4	3	4	3	3	2	4	4	3	3	4	3	3	3	3	2	4	3	3	3	4	3	4	4	4	115	Mean = 24.4
Sub-total	16	17	17	16	20	22	18	22	19	23	25	21	28	22	30	23	23	23	27	30	24	23	25	27	28	24	26	26	27	26	23	23	26	27	32	25	27	904	S.D. = 3.99 S.E. = 0.68
Total	83	99	89	102	104	114	98	112	105	137	134	134	143	116	149	116	125	116	143	133	135	123	142	139	134	118	123	132	138	134	111	129	136	139	140	118	131		

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Experimental Group (N = 37) (First Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
POLICY ISSUES																																							
Item 1	4	4	4	4	5	4	4	5	5	5	4	4	4	4	5	4	4	4	5	4	4	3	4	3	4	4	4	4	5	5	4	4	4	4	3	4	3		
6	4	4	5	4	5	4	3	4	4	5	4	4	4	5	5	5	3	4	4	3	4	3	4	3	3	2	5	3	5	2	3	4	2	3	2	4	3		
11	4	4	3	5	4	5	3	2	3	2	4	3	2	3	4	4	3	4	3	2	2	2	3	2	2	3	4	2	4	4	4	4	2	3	2	3	3		
16	5	5	5	4	5	5	5	5	4	5	4	4	4	4	4	4	5	4	4	5	4	3	4	5	5	4	4	4	5	5	4	4	5	4	4	4	5		
21	4	4	5	4	4	4	5	3	4	4	3	3	4	4	3	4	3	4	3	3	4	3	4	4	4	3	3	4	4	4	5	4	5	3	4	3	4		
26	5	4	4	4	4	5	4	4	3	4	3	3	3	3	3	3	4	4	4	3	3	3	4	3	2	3	3	3	4	3	4	3	4	3	4	3	4		
31	5	4	5	4	5	4	4	4	4	3	4	4	4	4	4	4	5	4	3	3	4	4	4	4	4	3	4	4	4	4	5	4	4	3	3	4	4		
36	4	4	4	4	5	4	4	3	4	4	4	5	5	4	4	4	5	4	3	3	4	3	4	4	4	5	4	4	4	4	4	4	4	4	4	4	3		Mean = 30.5
Sub-total	35	33	35	33	37	35	32	30	31	33	30	30	30	34	32	32	33	32	27	26	29	24	31	28	28	27	31	28	35	31	33	31	29	28	24	32	29	1130	S.D. = 3.48 S.E. = 0.57
AIMS OF LIFELONG LEARNING																																							
Item 2	5	4	4	4	4	4	4	4	3	4	5	3	4	4	4	4	4	4	4	3	4	3	4	3	3	4	4	3	5	4	4	3	4	4	3	4	4		
7	5	4	5	4	4	4	4	4	4	3	5	4	4	4	3	3	4	4	4	3	4	4	4	5	4	3	4	4	4	5	4	4	3	5	4	4	4		
12	5	5	5	5	4	4	3	4	3	3	4	4	2	4	3	4	3	4	5	4	3	3	4	4	3	3	3	2	4	4	4	3	3	5	4	4	4		
17	4	5	5	4	4	4	5	4	4	4	4	3	4	4	4	3	5	4	4	4	3	4	4	3	3	4	4	4	3	4	4	4	4	4	3	4	4		
22	4	3	4	4	3	4	3	4	4	3	4	5	3	4	4	4	3	2	2	4	2	3	4	4	5	4	4	4	4	4	4	4	3	4	4	4	3		
27	3	4	4	4	4	5	4	5	4	5	3	5	3	4	4	4	4	3	3	5	4	4	4	3	4	5	3	4	4	4	4	4	4	4	4	3	3		
32	3	3	3	4	2	4	4	4	4	3	4	3	2	3	4	4	4	3	3	3	2	3	4	4	4	2	3	4	4	3	4	4	3	3	3	3	2		
37	4	4	4	4	4	5	3	4	4	4	3	5	3	3	3	4	4	3	4	4	4	3	4	3	4	3	4	2	4	4	4	4	4	4	4	3	3		Mean = 29.9
Sub-total	33	32	34	33	29	34	30	33	30	29	32	31	25	30	29	30	31	27	29	30	29	27	32	27	30	28	29	27	32	32	32	30	26	33	29	26	27	1107	S.D. = 2.5 S.E. = 0.41
IMPLEMENTATION PROCESS																																							
Item 3	5	4	4	4	4	3	2	5	4	4	3	4	3	3	3	4	4	4	3	5	3	3	3	3	4	4	3	3	3	4	4	4	4	4	3	4	4		
8	4	4	4	5	4	4	4	4	4	3	3	4	4	4	3	3	4	5	4	5	3	4	4	2	3	4	4	4	4	4	3	4	4	3	4	4	3		
13	3	4	4	4	4	4	4	3	3	3	4	4	5	4	3	4	3	3	4	4	3	3	3	3	3	2	4	3	4	3	3	4	4	3	4	2	2		
18	4	4	5	5	3	4	4	3	4	4	3	4	4	3	3	4	4	3	4	3	4	3	4	3	3	4	3	4	4	4	3	3	3	2	4	4	4		
23	3	4	3	3	2	3	2	3	3	3	2	3	3	3	4	3	4	3	3	2	3	3	3	4	3	4	3	4	4	3	5	3	3	4	4	4	5		
28	3	4	3	3	3	5	4	4	4	3	4	3	4	3	4	4	3	4	4	4	3	3	3	4	2	3	2	3	3	3	4	4	4	4	3	4	3		
33	3	5	3	4	3	5	3	3	4	3	4	3	2	4	4	4	4	4	4	3	4	3	3	3	2	2	2	3	3	4	3	3	4	4	3	4	3		
38	4	4	3	3	4	3	4	3	2	3	4	4	3	4	4	3	3	3	4	4	4	3	3	4	5	3	3	3	4	5	4	3	4	3	4	3	4		Mean = 28.1
Sub-total	29	33	29	31	26	31	27	28	28	26	27	28	28	27	28	29	29	28	30	30	27	25	26	27	25	26	24	29	29	30	29	28	30	27	29	29	28	1040	S.D. = 1.79 S.E. = 0.29

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Experimental Group (N = 37) (First Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
LEARNING CLIMATE																																							
Item 4	5	4	3	4	4	5	4	4	4	3	4	4	4	4	4	4	4	5	4	4	4	3	4	3	5	4	4	4	4	4	3	3	4	3	3	3	3		
9	5	4	3	4	4	4	5	5	4	3	4	4	3	3	4	4	4	4	4	3	3	4	4	3	3	4	3	4	4	4	4	4	2	3	3	3	3		
14	3	4	4	3	4	4	5	4	4	3	3	4	5	3	4	4	2	3	3	2	3	3	3	3	2	3	3	3	3	3	3	4	4	3	4	3	3		
19	3	3	3	3	4	3	4	5	4	3	4	4	4	3	3	4	4	4	3	3	3	4	3	3	3	3	3	4	3	3	3	2	3	2	2	3	1		
24	2	3	2	4	2	2	2	3	3	2	2	2	3	3	3	3	4	3	3	3	2	2	3	3	2	2	3	2	2	3	3	3	4	3	5	3	3		
29	3	5	4	2	4	4	4	4	4	4	4	4	2	3	3	4	3	4	3	4	2	3	3	3	4	4	4	3	3	3	2	4	4	3	4	3	3		
34	2	3	4	4	4	4	4	4	4	3	4	3	4	2	2	3	3	3	4	5	3	2	4	3	4	4	3	3	3	4	3	4	4	3	4	3	4		
39	4	4	4	3	3	4	3	3	3	3	4	4	4	3	3	4	3	4	3	5	3	3	2	3	4	3	4	3	3	4	4	4	4	4	4	3	4		Mean = 27
Sub-total	27	30	27	27	28	30	30	32	30	24	29	29	29	23	26	30	27	30	26	29	23	24	26	24	26	27	27	29	25	29	25	28	29	24	29	24	27	999	S.D. = 2.37 S.E. = 0.39
INDIVIDUAL RESPONSIBILITIES																																							
Item 5	5	4	4	4	3	3	4	4	4	4	4	4	4	4	4	5	5	3	3	4	3	3	3	3	3	3	4	2	3	3	4	3	3	4	2	4	3		
10	4	4	4	5	4	3	4	4	4	5	4	4	4	4	4	4	4	5	3	4	3	3	3	4	3	2	4	3	4	4	4	4	3	3	2	4	3		
15	4	4	5	4	4	3	3	4	4	3	3	4	3	4	4	3	3	3	4	4	4	3	3	3	3	2	2	2	3	3	3	3	3	4	3	3	3		
20	3	4	4	4	3	3	5	4	4	3	3	3	4	4	4	4	4	5	4	3	3	3	3	3	2	4	2	3	2	3	2	4	4	3	2	4	2		
25	3	5	3	3	4	2	4	5	4	3	4	3	4	4	4	2	2	4	5	3	3	3	2	2	2	3	3	3	3	3	2	3	3	4	3	4	3		
30	3	5	4	3	5	4	4	5	4	3	4	4	3	3	3	2	3	4	3	3	3	3	2	2	3	3	5	3	3	3	2	3	3	4	3	4	2		
35	4	3	3	4	4	5	5	3	4	4	3	5	4	4	3	3	4	4	3	4	2	3	3	2	2	3	2	3	3	3	4	3	2	3	3	4	3		
40	3	4	4	4	4	4	4	3	4	4	2	4	3	4	3	4	3	4	4	3	3	4	3	2	2	2	3	4	3	2	2	3	4	3	3	4	3		Mean = 27.2
Sub-total	29	31	32	31	31	26	32	32	32	29	28	29	27	31	29	27	28	32	29	27	24	25	20	21	20	22	25	23	24	24	23	25	25	28	22	31	22	1006	S.D. = 4.48 S.E. = 0.74

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Experimental Group (N = 30) (Second Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total	
POLICY ISSUES																																
Item 1	5	4	4	4	5	5	4	5	4	5	4	4	5	5	4	3	4	4	4	3	5	5	5	4	4	4	5	5	4	4		
6	4	4	4	5	5	5	4	4	4	5	5	4	4	4	4	5	5	5	4	4	4	5	4	5	4	4	4	5	5	4		
11	2	4	4	2	2	4	2	5	3	2	3	2	3	4	4	2	3	4	2	2	5	4	3	2	2	4	3	3	4	4		
16	5	4	4	5	5	5	4	4	4	4	4	5	4	4	5	5	4	4	5	5	4	4	5	3	5	3	5	5	3	4		
21	3	4	3	4	3	5	4	4	4	4	5	4	3	5	3	4	4	3	3	4	5	5	5	4	4	4	3	3	4	4		
26	3	4	4	4	3	3	3	3	4	4	3	4	5	5	3	3	4	4	3	3	3	3	4	3	4	4	3	4	3	3		
31	4	4	5	4	5	5	4	3	4	5	4	4	4	5	4	4	3	5	5	4	4	4	5	3	4	4	4	4	5	4		
36	4	4	4	5	3	5	4	4	4	4	4	3	4	4	5	5	4	4	4	4	5	3	4	4	4	4	4	5	4	3		Mean = 32.1
Sub-total	30	32	32	33	36	37	29	32	31	33	32	30	32	36	32	31	31	33	32	28	35	33	35	28	31	31	31	34	32	30	962	S.D. = 2.66 S.E. = 0.48
AIMS OF LIFELONG LEARNING																																
Item 2	4	4	5	4	4	4	4	5	4	3	3	4	5	4	4	4	5	4	4	4	4	5	4	3	5	4	4	4	4	3		
7	3	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	4	5	4	4	3	4	3	3	4	4	4	4	4		
12	4	3	3	3	4	5	4	5	4	4	4	5	4	3	3	3	3	4	4	4	5	4	5	4	3	3	4	3	5	4		
17	2	4	4	4	2	5	2	4	5	3	3	2	5	4	4	4	3	5	4	2	5	4	4	2	3	5	4	2	5	2		
22	4	4	3	4	4	3	4	4	4	3	4	3	4	4	5	3	4	4	4	4	3	4	4	3	4	4	5	3	4	4		
27	4	4	4	5	5	4	4	4	5	4	4	4	4	5	5	4	4	4	4	3	4	5	4	3	3	4	4	4	5	3		
32	4	4	3	4	4	5	2	4	4	3	3	4	4	4	4	3	5	4	4	2	3	4	4	4	2	3	3	2	4	3		
37	3	4	4	5	4	5	4	3	5	4	3	4	4	4	5	4	4	5	4	3	3	5	4	4	5	3	4	4	4	3		Mean = 30.7
Sub-total	28	31	30	33	31	35	28	33	37	28	28	30	34	32	33	28	32	34	33	27	31	34	37	26	28	30	32	26	35	26	920	S.D. = 3.12 S.E. = 0.57
IMPLEMENTATION PROCESS																																
Item 3	4	3	4	3	4	4	4	5	5	5	4	3	3	4	3	3	3	5	4	5	5	4	4	4	3	5	5	5	4	3		
8	4	4	4	4	4	4	4	4	4	5	4	4	5	5	5	4	4	5	5	5	4	4	4	4	4	4	4	5	5	3		
13	4	4	3	3	2	4	4	4	4	4	3	2	3	3	4	4	2	5	4	3	3	2	4	3	3	3	4	4	4	4		
18	4	4	5	5	4	4	4	5	4	4	4	3	3	4	4	4	5	4	4	3	4	4	4	3	4	3	4	3	4	3		
23	2	4	3	2	4	3	2	4	4	3	4	4	2	3	3	3	4	3	3	3	3	2	3	2	2	3	4	3	3	2		
28	2	3	3	5	4	5	4	3	4	5	4	5	4	4	3	3	4	5	3	3	2	2	4	3	2	2	3	4	4	3		
33	2	4	3	5	4	3	4	3	4	4	4	4	5	3	4	2	4	4	3	4	2	3	4	2	2	5	4	3	3	4		
38	4	4	3	4	4	4	4	3	5	5	3	5	4	4	3	5	5	4	4	4	3	4	3	4	4	3	3	4	3	3		Mean = 29.6
Sub-total	26	30	28	31	30	31	30	31	34	35	34	30	29	30	31	28	31	35	30	30	26	25	30	25	24	28	31	31	30	25	889	S.D. = 2.66 S.E. = 0.48

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Experimental Group (N = 30) (Second Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
LEARNING CLIMATE																															
Item 4	4	4	4	5	4	5	4	5	4	5	4	4	4	4	4	4	5	4	4	4	3	4	4	3	2	5	4	3	4	3	
9	4	3	4	4	5	5	4	5	5	5	4	3	3	4	4	4	5	5	4	5	5	5	4	3	3	4	5	5	3	3	
14	3	3	4	4	4	5	4	4	4	4	5	3	4	4	3	3	4	5	3	3	3	3	4	3	3	4	5	4	4	3	
19	3	4	4	3	4	4	3	5	4	5	3	4	4	3	5	3	4	4	3	4	4	3	3	4	4	5	3	3	4	4	
24	3	4	2	2	3	3	2	4	2	2	2	3	3	2	2	4	3	3	2	2	4	4	2	2	3	3	4	4	3	2	
29	4	3	4	4	4	5	4	4	4	5	4	3	4	4	4	4	4	5	3	3	4	4	34	3	4	4	3	3	3	3	
34	4	4	4	5	4	5	2	4	4	4	4	4	4	4	5	2	4	4	2	4	3	3	2	4	4	4	2	2	3	2	
39	4	4	2	4	4	4	4	4	5	4	4	4	5	4	4	4	3	3	3	3	4	2	3	3	3	4	3	3	4	3	
Sub-total	29	29	28	31	32	36	27	35	32	34	30	28	31	29	29	28	32	33	24	27	29	27	25	25	26	33	29	27	28	23	876
INDIVIDUAL RESPONSIBILITIES																															
Item 5	4	4	4	3	4	4	2	4	4	5	4	4	5	4	4	3	4	4	4	5	5	4	4	4	3	3	4	4	2	3	
10	4	3	4	4	5	5	5	3	4	5	4	3	3	4	4	5	4	4	5	4	3	5	4	4	4	3	3	4	5	4	
15	4	4	3	4	4	4	4	4	4	4	4	3	3	3	4	4	3	3	3	3	4	5	5	4	3	2	4	4	5	4	
20	4	4	4	4	4	5	4	4	4	5	4	5	5	4	4	5	4	4	5	5	5	4	5	5	4	3	4	4	4	4	
25	4	4	4	3	4	4	4	4	4	2	4	4	4	4	3	3	4	4	5	3	3	4	4	2	3	4	4	2	4	3	
30	3	4	4	3	4	4	2	4	4	5	3	4	3	4	4	4	5	3	3	4	4	4	3	3	3	3	4	3	3	3	
35	4	4	4	3	4	4	4	4	4	5	4	4	4	3	3	3	4	4	5	3	3	3	4	4	4	5	3	3	3	3	
40	4	4	4	5	4	5	4	4	5	5	4	4	4	4	5	5	4	4	3	3	4	3	4	4	3	3	3	4	4	3	
Sub-total	31	31	31	28	33	35	29	31	33	36	31	31	31	30	31	32	32	30	33	30	31	32	33	30	27	26	29	28	28	27	920

Mean = 29.2
S.D. = 3.2
S.E. = 0.59

Mean = 30.7
S.D. = 2.27
S.E. = 0.41

APPENDIX C5

Continuing Nursing Education Awareness Index: Total Scores Obtained by the Control Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
POLICY ISSUES																																							
Item 1	3	4	3	3	3	4	3	3	3	2	3	3	4	4	4	3	5	4	4	5	4	3	3	3	4	3	4	3	3	4	3	5	3	3	4	3	3		
6	2	4	4	3	3	3	1	3	3	3	3	3	2	3	2	4	4	4	2	3	4	3	3	3	4	3	4	3	4	4	3	4	4	3	4	3	3		
11	2	2	1	1	1	1	2	3	3	3	3	2	2	2	1	3	1	2	2	3	2	3	2	3	2	2	2	4	2	3	1	4	2	4	2	4	1		
16	3	4	4	3	4	4	3	3	3	3	4	3	3	3	4	3	3	3	2	4	3	4	3	3	3	3	4	4	3	4	4	4	3	3	4	3	3		
21	2	3	2	4	1	1	2	2	3	2	3	3	2	2	3	2	4	3	3	2	2	2	2	2	2	2	3	3	3	3	3	5	3	3	3	2	2		
26	2	3	3	3	3	3	3	2	3	2	3	3	3	3	3	3	3	2	1	4	4	2	3	3	2	2	2	3	3	3	1	3	3	2	3	3	3		
31	4	3	4	3	3	4	3	4	3	3	3	5	3	4	3	5	4	4	4	5	4	3	3	4	4	4	4	4	4	4	3	5	4	4	3	3	4		
36	4	4	4	3	3	3	4	3	3	4	3	3	3	4	4	3	3	3	1	3	4	3	3	3	3	3	2	4	3	3	4	4	4	3	3	3	4		
Sub-total	22	27	25	22	21	18	21	23	24	22	25	25	22	25	24	28	27	25	19	30	28	24	23	25	24	22	25	28	25	28	22	34	26	25	24	24	23	895	Mean = 24.2 S.D. = 3.04 S.E. = 0.5
AIMS OF LIFELONG LEARNING																																							
Item 2	3	4	3	3	3	3	3	3	3	3	3	3	4	4	3	3	4	5	4	4	3	3	2	3	3	3	3	3	3	3	3	5	3	4	4	3	4		
7	3	3	3	4	3	3	3	3	3	3	3	4	3	3	4	3	4	4	2	4	4	4	3	3	3	3	4	3	3	3	3	4	3	4	3	4	3		
12	3	4	4	3	2	3	3	3	2	3	3	2	3	3	3	4	4	2	2	3	3	3	3	4	2	3	3	3	3	3	3	5	4	4	4	2	4		
17	3	3	3	4	4	3	3	4	3	3	4	3	3	4	2	4	3	3	1	4	3	3	3	3	3	3	3	4	3	4	3	4	3	3	3	4	3		
22	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	4	3	3	3	4	2	2	3	4	3	3	2	4	3	3	3	4	3	3	3	3	3		
27	3	3	4	3	3	4	4	3	3	2	3	4	3	3	3	5	3	3	3	4	4	3	3	3	4	3	4	4	4	4	3	4	3	4	4	3	3		
32	4	4	4	4	3	3	3	3	3	3	2	2	3	3	3	4	3	3	3	4	3	4	3	3	3	3	4	4	3	3	3	4	4	4	3	3	3		
37	3	3	4	3	3	3	4	3	3	3	2	3	3	3	3	4	3	3	3	3	4	3	3	3	3	3	4	3	4	3	3	4	3	3	4	4	3		
Sub-total	25	27	28	27	24	25	26	25	23	24	24	25	25	27	25	31	27	26	21	30	26	25	23	25	24	24	27	27	26	26	24	34	26	29	28	26	26	961	Mean = 26 S.D. = 2.37 S.E. = 0.39
IMPLEMENTATION PROCESS																																							
Item 3	3	4	3	3	3	3	2	2	3	3	3	3	3	2	3	4	2	3	3	3	3	3	3	3	3	3	4	3	3	4	3	3	2	3	2	3	2		
8	3	3	4	4	3	4	3	3	3	3	3	3	3	3	4	4	3	4	3	4	3	3	3	3	3	3	4	4	3	3	2	4	3	4	3	4	3		
13	3	3	4	4	2	3	3	4	2	2	3	3	2	3	3	4	2	3	3	4	4	3	3	3	2	3	3	3	3	3	3	5	4	3	3	3	4		
18	3	3	4	4	4	4	2	2	2	3	2	3	3	4	4	3	4	4	4	4	4	4	3	4	3	3	3	3	3	3	4	5	2	3	3	3	3		
23	3	2	4	3	3	2	3	2	2	3	2	2	3	2	3	4	2	2	2	2	2	2	3	3	1	2	2	4	3	2	2	4	3	4	2	2	2		
28	3	3	4	3	4	3	3	3	3	3	3	4	2	2	3	3	4	3	4	4	3	3	3	3	2	2	3	3	3	3	3	4	3	3	2	3	2		
33	3	3	4	4	3	3	3	2	3	3	3	2	3	3	3	4	3	4	3	3	3	3	4	3	2	2	3	3	4	2	3	4	2	3	4	4	3		
38	4	3	3	3	3	3	3	3	3	3	2	4	3	4	3	3	4	3	3	3	3	3	2	4	2	2	4	3	3	3	1	4	3	3	3	3	3		
Sub-total	25	24	30	28	25	25	19	21	21	23	21	24	22	23	26	29	24	26	25	27	25	24	24	26	18	20	26	26	25	23	21	33	22	26	22	23	22	894	Mean = 24.2 S.D. = 2.85 S.E. = 0.47

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Control Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
LEARNING CLIMATE																																							
Item 4	3	3	4	4	4	3	3	3	3	3	3	3	4	3	3	4	4	4	4	4	3	3	3	3	4	3	3	4	3	4	3	4	3	3	4	3	3		
9	3	4	4	4	3	3	3	3	3	3	3	3	4	3	3	4	4	3	3	4	4	3	3	3	3	3	4	3	4	4	3	4	3	3	3	3	3		
14	2	3	3	4	3	3	3	2	3	3	3	3	3	4	3	4	3	3	3	4	3	4	3	3	3	3	3	3	3	3	3	4	3	2	4	3	4		
19	3	3	2	3	3	1	3	2	2	2	3	3	2	3	2	3	4	4	2	4	3	3	3	3	2	3	2	3	3	3	2	4	2	2	2	3	3		
24	2	3	1	2	3	3	3	2	2	3	3	2	3	2	3	3	2	2	1	3	2	3	3	2	1	2	2	4	3	2	1	4	2	3	3	3	2		
29	3	3	4	4	3	3	3	3	3	3	3	4	3	3	3	4	5	3	4	2	2	3	4	3	3	2	3	3	3	3	3	4	3	3	3	3	4		
34	2	3	4	3	3	3	3	4	3	3	3	3	3	3	3	4	3	4	4	3	4	3	4	3	2	2	3	3	3	3	4	5	3	4	3	3	4		
39	2	4	2	3	3	3	3	3	3	4	3	5	4	3	3	4	4	4	3	4	3	3	3	4	4	3	4	2	4	4	4	5	4	3	3	3	3		Mean = 24.7
Sub-total	20	26	25	26	25	21	24	22	22	24	24	25	26	24	23	30	29	27	24	28	24	25	26	24	22	21	24	26	26	26	23	34	23	23	24	24	26	916	S.D. = 2.57 S.E. = 0.42
INDIVIDUAL RESPONSIBILITIES																																							
Item 5	2	3	4	4	3	3	3	2	3	2	3	3	3	3	2	4	3	2	4	4	3	3	3	3	4	2	4	3	3	4	3	4	3	3	4	3	2		
10	3	4	4	3	3	4	3	3	3	3	3	3	4	3	3	4	4	3	3	3	3	3	3	3	4	3	4	4	3	4	3	5	4	3	3	3	3		
15	2	3	4	4	4	3	3	3	3	2	3	4	3	2	3	3	4	3	2	4	3	3	3	3	3	3	3	3	3	3	3	4	4	2	3	2	2		
20	2	2	2	3	3	1	2	2	2	1	3	3	2	2	3	2	4	3	3	4	3	3	3	3	3	3	3	4	3	3	3	4	2	2	2	3	2		
25	2	3	2	3	3	3	3	3	3	2	3	3	3	2	3	3	4	3	4	3	2	4	4	3	2	3	3	3	3	3	1	4	3	3	3	2	2		
30	3	2	4	4	3	3	4	2	3	3	3	3	2	3	3	3	3	3	1	2	3	2	3	3	3	2	3	3	3	3	3	4	3	2	3	3	3		
35	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	4	3	3	3	3	2	4	3	3	3	3	3	3	5	3	3	4	4	3		
40	2	3	4	4	3	3	3	2	3	2	3	3	2	3	3	3	4	3	3	4	3	3	4	4	4	2	4	3	4	4	3	5	3	4	3	3	3		Mean = 24
Sub-total	19	23	27	28	25	23	24	20	22	18	24	25	22	21	22	24	29	23	24	27	23	24	26	24	26	21	27	26	25	27	22	35	25	22	25	23	20	889	S.D. = 3.12 S.E. = 0.51

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Control Group (N = 32) (First Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total	
POLICY ISSUES																																		
Item 1	3	4	2	3	3	4	3	4	3	3	4	4	3	4	4	3	4	4	4	4	3	4	2	4	4	4	4	3	3	3	4	3		
6	4	3	3	3	3	4	3	2	3	4	3	3	3	3	3	4	4	2	3	3	3	3	3	3	2	3	2	3	2	3	3	3		
11	4	4	4	1	3	4	3	2	3	3	4	2	3	4	1	3	3	2	4	4	4	3	2	3	2	4	2	3	2	4	4	1		
16	4	3	3	4	3	4	3	3	2	4	3	3	2	3	2	4	3	3	3	3	3	3	2	3	2	3	3	3	2	3	3	2		
21	2	1	3	1	4	3	2	2	2	3	1	4	1	1	3	3	3	2	3	1	2	2	1	2	3	4	2	4	1	2	3	3		
26	3	3	4	3	3	3	3	4	4	4	3	3	3	4	3	4	4	4	4	4	4	4	3	4	4	4	4	3	2	4	4	1		
31	3	4	4	4	3	4	3	4	4	5	4	4	3	4	4	5	3	4	4	4	3	3	5	3	2	4	4	3	4	3	4	3		
36	3	4	3	3	3	3	3	4	4	3	4	2	4	4	3	3	3	4	4	4	4	3	3	3	3	4	4	3	2	4	4	4		Mean = 25.7
Sub-total	29	26	26	21	25	29	23	25	28	29	26	28	22	27	23	29	27	25	32	27	29	23	25	23	22	30	25	25	18	29	29	10	823	S.D. = 3.18 S.E. = 0.56
AIMS OF LIFELONG LEARNING																																		
Item 2	3	4	3	3	3	3	3	3	3	4	3	4	3	4	3	3	3	4	3	3	4	3	4	3	3	4	3	4	3	4	3	2		
7	3	2	3	3	4	4	3	4	3	2	3	2	3	3	4	3	2	4	3	3	2	4	2	3	3	3	3	4	4	4	4	3		
12	3	4	2	3	3	4	3	4	3	2	3	4	2	3	1	3	4	5	4	3	4	4	4	3	4	3	3	2	4	2	3	3		
17	3	4	4	3	4	4	4	3	2	4	3	3	3	3	3	3	3	4	3	3	4	4	4	3	4	4	3	4	4	4	4	3		
22	4	3	3	3	4	3	2	3	3	4	1	3	3	3	1	2	3	5	3	2	2	3	3	3	3	3	4	4	3	4	3	2		
27	3	4	4	3	4	4	4	3	3	4	2	3	3	4	3	1	3	3	3	3	4	4	4	4	4	3	3	4	4	4	4	3		
32	3	4	4	1	3	2	4	4	3	4	3	4	2	3	4	3	4	4	3	3	4	2	4	3	3	3	3	2	3	2	4	3		
37	3	4	3	3	4	4	3	3	2	3	3	4	3	3	3	3	2	4	3	3	3	4	4	3	4	3	3	3	4	3	3	2		Mean = 25.6
Sub-total	25	29	26	22	32	28	30	26	22	26	21	27	22	26	21	24	24	33	25	23	26	28	29	25	28	26	25	26	30	26	28	21	820	S.D. = 3.11 S.E. = 0.55
IMPLEMENTATION PROCESS																																		
Item 3	2	3	2	1	3	3	3	4	4	1	2	3	3	4	2	3	3	3	3	2	4	2	3	4	2	4	3	3	4	4	2	3		
8	4	3	3	2	3	4	3	2	3	4	2	2	4	4	3	2	2	3	1	3	2	3	1	1	3	4	2	1	3	4	2	3		
13	4	3	3	3	3	4	3	3	3	3	2	3	2	4	3	4	3	4	4	3	5	3	4	4	3	3	3	3	3	3	4	2		
18	4	1	2	4	4	4	3	3	3	4	2	3	3	3	3	4	3	4	3	2	2	2	3	4	2	2	3	3	2	3	4	3		
23	5	3	2	4	2	4	3	3	3	3	2	3	4	4	2	3	2	4	4	3	4	2	4	4	2	3	2	4	2	3	5	3		
28	2	3	2	3	4	3	3	4	3	4	3	3	3	3	3	3	3	4	3	2	3	2	3	3	2	3	3	3	2	3	2	3		
33	4	3	3	4	2	4	1	3	5	2	3	4	3	4	2	3	4	4	3	3	5	3	3	3	3	3	4	3	4	5	4	3		
38	3	3	2	4	3	4	3	4	4	4	3	3	3	3	3	3	2	2	4	3	2	2	4	4	2	4	2	3	3	3	3	3		Mean = 25.8
Sub-total	26	22	19	25	24	30	22	26	28	25	19	24	25	29	21	25	22	28	25	21	27	19	25	27	21	26	22	23	23	28	26	23	776	S.D. = 3.33 S.E. = 0.59

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Control Group (N = 32) (First Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
LEARNING CLIMATE																																	
Item 4	4	3	3	4	2	3	3	3	4	4	3	3	3	4	3	3	3	4	3	4	4	3	4	3	3	3	4	3	3	3	4	4	
9	3	4	3	1	3	3	1	3	3	4	2	2	2	4	3	1	1	1	2	2	4	2	3	2	2	3	4	3	3	4	3	2	
14	3	4	3	3	3	3	3	3	3	4	3	3	3	5	4	3	3	4	3	4	4	3	3	4	3	3	3	3	4	3	4	4	
19	4	3	3	3	4	4	3	3	3	5	4	3	2	4	3	3	3	4	3	4	3	4	3	3	3	3	3	3	2	4	2	5	
24	2	3	3	3	3	3	3	2	4	4	4	2	3	5	3	3	3	3	2	4	4	3	3	3	3	3	3	1	3	3	4	3	
29	4	4	4	2	3	3	4	4	3	5	4	2	2	4	3	4	4	4	4	3	4	3	3	3	3	3	3	3	3	3	3	3	
34	1	3	3	2	4	4	2	2	2	4	3	3	3	4	3	2	2	2	2	3	4	3	3	2	2	4	3	3	3	4	4	4	
39	3	3	4	4	2	4	4	3	3	4	3	2	3	4	4	4	4	2	3	3	4	5	3	4	4	2	2	3	4	2	4	4	
Sub-total	24	27	26	22	24	26	23	23	24	34	26	20	21	34	26	23	23	25	22	26	31	25	25	24	23	24	26	21	24	26	28	29	805
INDIVIDUAL RESPONSIBILITIES																																	
Item 5	3	4	3	4	2	3	4	4	3	2	1	2	2	4	3	3	4	2	1	4	4	1	4	2	4	2	3	4	3	3	2	4	
10	3	3	4	2	2	3	4	4	4	3	3	2	2	3	3	3	3	3	2	4	4	2	3	3	4	4	4	3	4	4	4	3	
15	3	4	3	3	2	3	4	3	3	3	2	3	2	4	3	4	3	3	3	1	4	4	3	4	3	2	3	2	5	3	3	4	
20	3	3	4	3	2	3	3	4	3	3	2	2	2	3	4	4	3	4	2	3	4	3	4	3	4	2	2	3	4	3	3	3	
25	2	3	3	3	2	3	4	4	3	3	3	2	3	4	2	5	2	3	2	3	3	4	2	3	4	3	3	3	3	3	3	4	
30	3	4	4	2	2	3	4	3	2	3	3	2	1	4	3	3	3	3	2	3	3	3	4	3	3	2	3	2	4	3	4	3	
35	2	3	2	3	2	3	3	4	4	2	2	2	2	3	2	4	3	2	3	3	3	3	4	3	4	2	3	3	4	3	2	3	
40	3	4	4	3	3	3	3	4	2	3	2	2	2	4	2	4	2	3	3	3	3	3	3	2	4	2	4	3	5	3	4	4	
Sub-total	22	28	27	23	17	24	27	30	24	22	18	17	16	27	22	30	23	23	18	24	28	21	27	24	30	19	25	23	32	25	25	28	781

Mean = 25.2
S.D. = 3.28
S.E. = 0.58

Mean = 24.4
S.D. = 4.11
S.E. = 0.73

Continuing Nursing Education Awareness Index:
Total Scores Obtained by the Control Group (N = 26) (Second Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total	
POLICY ISSUES																												
Item 1	4	4	4	5	5	4	4	4	3	5	5	3	3	4	5	4	4	3	3	4	4	4	3	4	4	3		
6	5	4	4	4	5	4	4	3	4	4	5	4	3	3	4	4	3	4	4	3	4	3	4	4	4	2		
11	2	2	2	3	4	2	2	3	2	2	2	2	2	2	3	4	2	3	2	2	3	2	2	3	2	3		
16	5	4	4	4	5	4	4	3	3	4	5	4	4	3	2	4	3	2	3	3	4	3	4	3	4	4		
21	4	3	2	4	4	3	4	2	4	4	5	4	2	2	3	4	4	4	3	2	4	4	2	4	2	3		
26	3	4	2	3	4	4	4	4	2	4	3	2	4	2	3	2	2	3	3	3	2	3	4	3	3	3		
31	5	4	4	4	5	4	5	4	3	5	5	4	4	4	3	4	3	3	3	4	4	3	4	4	4	4		
36	5	5	4	4	4	4	2	3	3	5	5	4	4	3	3	4	4	4	3	4	5	4	4	4	4	3		Mean = 28.3
Sub-total	33	30	28	31	36	29	29	26	24	33	35	28	27	25	27	29	25	26	24	25	30	27	27	29	27	25	735	S.D. = 3.25
																												S.E. = 0.64
AIMS OF LIFELONG LEARNING																												
Item 2	4	4	4	5	5	4	5	3	4	5	4	4	4	3	3	4	3	4	3	4	2	3	3	4	5	4		
7	4	4	4	2	4	4	4	3	3	4	5	3	3	3	5	4	4	4	4	3	4	4	5	4	3	4		
12	3	4	3	4	4	4	4	4	2	4	4	2	4	2	4	2	3	4	4	3	4	2	4	4	3	2		
17	4	4	4	4	5	2	4	3	2	4	5	4	4	4	3	4	4	2	4	2	3	2	5	4	3	4		
22	4	2	2	4	2	4	2	4	3	4	4	3	2	3	3	3	4	3	4	3	4	4	2	5	4	3		
27	4	4	4	4	5	4	5	3	4	4	4	4	4	4	2	3	3	4	2	3	3	3	4	5	2	4		
32	4	4	3	4	5	2	5	2	4	4	4	3	4	4	4	4	2	4	4	5	4	3	5	4	4	4		
37	4	4	3	4	4	4	5	4	3	5	5	4	2	3	3	3	3	5	4	3	4	4	5	4	4	4		Mean = 29.2
Sub-total	31	30	27	31	34	28	34	26	27	34	35	26	27	26	28	27	26	30	29	26	28	27	33	32	27	30	759	S.D. = 2.95
																												S.E. = 0.58
IMPLEMENTATION PROCESS																												
Item 3	5	4	4	4	5	4	4	3	3	5	5	3	4	4	3	4	4	3	4	3	5	5	4	3	5	4		
8	4	4	4	4	5	4	4	3	4	5	5	4	4	3	4	4	2	3	5	4	4	4	4	4	4	2		
13	4	2	4	4	4	4	4	4	3	4	3	4	4	4	4	2	4	4	4	4	2	4	2	4	3	4		
18	4	4	4	2	4	4	3	4	2	4	5	4	4	4	4	4	4	2	4	3	4	4	3	2	4	3		
23	4	3	2	4	2	4	2	3	4	2	1	4	2	2	2	4	4	2	2	4	4	2	4	4	2	4		
28	3	2	4	4	4	4	4	2	2	4	4	3	4	3	2	4	3	3	3	2	3	2	3	3	4	4		
33	4	4	4	4	4	2	4	2	2	4	4	2	4	3	3	3	4	3	4	3	4	3	3	2	3	4		
38	4	4	3	4	5	4	4	3	3	4	5	4	4	4	4	4	4	4	4	3	3	4	3	3	4	3		Mean = 28.1
Sub-total	32	27	29	30	33	30	29	24	23	32	27	28	30	27	26	29	29	24	30	26	29	28	26	25	29	28	730	S.D. = 2.53
																												S.E. = 0.5

Continuing Nursing Education Awareness Index: Total Scores Obtained by the Control Group (N = 26) (Second Post-Test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total	
LEARNING CLIMATE																												
Item 4	4	4	4	4	5	4	4	3	4	4	4	3	4	3	5	3	3	5	4	4	4	4	5	3	4	5		
9	5	4	4	5	5	4	4	3	4	5	5	4	5	4	4	3	4	4	3	4	3	4	4	2	4	4		
14	4	3	3	4	3	4	4	3	2	5	5	4	5	4	4	3	4	4	4	2	2	2	4	4	4	3		
19	4	4	2	4	5	4	5	2	3	5	4	2	4	2	4	4	4	4	2	3	3	3	4	4	3	2		
24	2	2	3	2	2	2	4	2	3	2	3	4	4	4	3	3	2	3	2	2	2	4	4	4	2	2		
29	5	4	4	3	5	3	2	4	2	4	2	3	2	4	4	4	4	4	4	4	4	3	2	4	3	2		
34	5	4	4	5	4	4	4	3	3	5	4	4	4	4	2	2	3	5	4	3	4	4	4	4	4	4		
39	4	4	4	4	2	4	4	3	4	5	5	4	3	4	3	3	4	2	4	4	3	4	4	3	3	3		Mean = 28.8
Sub-total	33	29	28	31	31	29	34	23	25	35	32	26	32	29	29	25	28	30	27	28	25	29	32	28	27	25	750	S.D. = 3.05 S.E. = 0.6
INDIVIDUAL RESPONSIBILITIES																												
Item 5	4	4	2	4	4	2	5	3	3	4	5	4	4	4	4	4	2	4	5	4	5	2	4	4	5	4		
10	4	4	4	4	5	4	5	4	3	4	5	5	4	4	3	4	4	3	4	5	3	4	2	4	4	2		
15	4	4	4	3	4	4	4	4	3	4	4	4	4	2	4	3	5	4	4	2	4	3	4	4	4	4		
20	4	2	4	4	5	4	5	2	4	5	4	3	4	4	4	4	5	4	4	4	4	4	3	4	4	3		
25	3	4	4	4	3	4	5	4	2	3	2	4	3	4	4	5	4	4	4	4	2	4	4	5	2	3		
30	5	4	4	4	5	4	3	3	4	4	4	5	4	4	4	2	3	4	2	4	4	5	4	4	4	4		
35	4	5	4	4	4	4	5	3	4	5	4	5	5	3	2	4	4	2	4	4	4	5	4	4	4	3		
40	5	4	4	4	4	5	4	4	4	5	4	4	4	3	3	4	4	4	4	4	3	4	3	4	4	4		Mean = 30.3
Sub-total	33	31	30	31	35	31	36	27	27	34	32	33	32	28	28	30	31	29	32	31	29	31	28	33	31	27	789	S.D. = 2.67 S.E. = 0.52

APPENDIX D

THE JOB SATISFACTION PROFILE

APPENDIX D1.

JOB SATISFACTION PROFILE

Introduction

The purpose of this questionnaire is to determine your attitude to your job.

Please mark the following items according to the degree of your agreement. Thank you for your participation.

	STRONGLY AGREE	AGREE	NOT SURE	DISAGREE	STRONGLY DISAGREE
1. My quality of patient care is improving.					
2. My input at work is well-considered.					
3. Because of the skill I possessed, I have the opportunity to work in a desired specialty.					
4. My work has been interesting.					
5. I know how to delegate responsibilities to those able to assume them.					
6. I am unable to set goals to improve my performance.					
7. My colleagues have high regards for me.					
8. I am able to utilise the opportunity for professional growth.					
9. I am able to set realistic and achievable goals.					
10. I am able to exercise an independent nursing role.					
11. I have high self-esteem.					
12. My skill is acknowledged in nursing activity.					
13. I am able to provide input in nursing decisions.					
14. There is little challenge at work.					
15. I have been responsible for difficult decisions.					
16. I am able to use my initiative.					
17. My contribution at work is poorly regarded.					
18. I can determine priorities of nursing activities based on management principle.					

	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE
19. I have an interesting job to talk about.					
20. My level of responsibility has been increased.					
21. I do not seem to be progressing with my work.					
22. I feel my work is very important.					
23. I have been participating in the development of nursing objectives.					
24. I have the opportunity to evaluate the work I and others have done.					
25. I am able to fulfil my responsibility effectively.					
26. I feel especially good when it turns out after a period of time that my idea is working.					
27. I really feel that I am an important part of the team.					
28. I find my work very frustrating.					
29. I feel fresh and eager, ready to come to work.					
30. I believe my own work has been responsible for some patients' improvements.					
31. I have a good idea and solution to a problem.					
32. I have received recognition for my performance.					
33. My promotion prospect is good.					
34. I enjoy my work with much enthusiasm.					
35. The responsibility is great, and I have proved my ability to handle it.					

	STRONGLY AGREE	AGREE	NOT SURE	DISAGREE	STRONGLY DISAGREE
36. I get a tremendous feeling of satisfaction from seeing the improvement of nursing activity arising out of my idea.					
37. I feel I am just a pair of hands in the ward.					
38. There is a future in my nursing field.					
39. It is difficult to be creative at work.					
40. I have a responsible position.					
41. I am able to demonstrate the rightness to those who doubt me.					
42. My work is often praised.					
43. The opportunity for my future advancement is limited.					
44. I have the opportunity to provide a total patient care.					
45. I find it difficult to work without supervision.					
46. I can see the accomplishment of my work.					
47. My idea is often accepted by my peers.					
48. There is objective evidence for my growth in skills.					
49. I am a professional worker with autonomy.					
50. The responsibility is too much for me.					

APPENDIX D2

JOB SATISFACTION PROFILE:

THE SPLIT HALVES RELIABILITY OF THE SCORES

Scores of Odd No. items X	Scores of Even No. items Y	Deviation from mean x	y	x2	y2	xy
117	104	15.7	-1.5	246.5	2.25	-23.5
110	124	9.7	18.5	94.1	342.25	179.4
98	98	-3.3	7.5	10.9	56.25	24.7
105	117	3.7	11.5	13.7	132.25	42.5
124	111	22.7	5.5	415.3	30.25	124.8
105	105	3.7	-0.5	13.7	0.25	-1.8
110	119	8.7	13.5	75.7	182.25	117.4
78	105	-23.3	-0.5	442.9	0.25	11.6
87	102	-14.3	-3.5	204.5	12.25	50
115	108	13.7	2.5	187.7	6.25	6.8
106	120	4.7	14.5	22.1	210.25	68.1
98	101	-3.3	-4.5	10.9	20.25	14.8
103	125	1.7	19.5	2.9	280.25	33.1
108	119	6.7	13.5	44.9	182.25	117.4
99	99	-2.3	-6.5	5.3	42.25	14.9
100	106	-1.3	0.5	1.7	0.25	-0.6
105	108	3.7	2.5	13.7	6.25	9.2
101	102	0.3	-3.5	0.09	12.25	-1
98	113	-3.3	7.5	10.9	56.25	-24.7
99	102	-2.3	-3.5	5.3	12.25	8
98	98	-3.3	-7.5	10.9	56.25	24.7
85	101	-16.3	-4.5	265.7	20.25	73.3
97	105	-4.3	-0.5	18.5	0.25	2.1
102	103	0.7	-2.5	0.49	6.25	-1.7
105	114	3.7	8.5	13.7	72.25	31.4
Total = 2533	2638			1924.5 (Σx2)	1642.25 (Σy2)	956.9
Mean = 101.3	105.5					

Split - Halves Reliability correlation (r)

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x2 \times \Sigma y2}} = \frac{956.9}{\sqrt{1924.5 \times 1642.25}} = \frac{956.9}{\sqrt{3160510}}$$

$$= \frac{956.9}{1777.8} = 0.54$$

Spearman - Brown Prophecy Formula (R)

$$R = \frac{2r}{1+r} \quad \frac{2 \times 0.54}{1.54} = 0.7$$

APPENDIX D3

Job Satisfaction Profile
Scores of Top 27% and Bottom 27% of Subjects

1) Top 27% Subjects
N=10

		Subjects 1	2	3	4	5	6	7	8	9	10	total	%
items	1	4	3	4	3	3	4	3	3	3	3	33	66
	2	3	3	3	3	3	3	4	3	3	4	31	62
	3	1	2	2	1	3	4	3	3	3	4	26	52
	4	3	5	5	3	4	4	4	5	4	4	41	82
	5	3	3	3	3	4	3	3	3	2	3	30	60
	6	3	3	4	3	4	4	3	4	3	4	35	70
	7	3	3	4	4	4	3	3	3	3	3	33	66
	8	3	5	4	3	4	5	3	3	4	3	37	74
	9	3	3	4	5	4	4	5	3	4	3	39	78
	10	3	3	4	3	4	4	3	3	3	4	34	68
	11	3	3	4	3	4	3	5	5	3	3	36	72
	12	3	3	3	3	4	3	3	3	3	3	31	62
	13	3	3	4	3	4	3	4	4	4	3	35	70
	14	3	3	3	3	4	3	4	4	3	4	34	68
	15	2	2	3	2	4	2	3	3	3	3	27	54
	16	3	3	4	5	4	3	4	3	4	5	39	78
	17	3	3	3	2	4	2	3	3	4	3	30	60
	18	3	3	3	3	3	2	4	4	4	3	32	64
	19	3	4	4	4	4	4	4	4	4	4	39	78
	20	4	4	4	3	4	3	4	4	3	3	36	72
	21	3	4	4	4	4	4	3	4	4	3	37	74
	22	3	4	3	4	4	4	3	4	4	3	36	72
	23	2	3	3	3	4	5	3	3	4	3	33	66
	24	3	3	4	3	4	3	2	2	4	3	31	62
	25	3	3	5	5	4	3	3	3	4	3	32	64
	26	4	3	3	4	4	4	3	4	3	3	39	78
	27	4	3	3	4	4	4	3	4	3	3	35	70
	28	3	3	3	4	4	3	3	3	3	3	32	64
	29	3	2	2	4	3	3	5	5	3	3	33	66
	30	5	5	3	3	3	3	4	4	2	3	35	70
	31	3	4	3	3	2	5	3	3	3	3	34	68
	32	3	3	3	3	3	3	4	4	4	4	34	68
	33	4	3	3	2	3	4	3	3	3	3	31	62
	34	4	3	3	3	4	3	4	4	3	4	35	70
	35	5	3	4	4	3	5	3	3	4	5	39	78
	36	4	3	3	3	4	3	5	5	3	3	39	78
	37	3	3	5	4	3	2	5	3	3	4	35	70
	38	4	3	4	4	4	4	4	4	4	3	38	76
	39	4	3	3	4	4	4	2	2	4	3	33	66
	40	3	3	3	3	4	4	3	3	3	3	32	64
	41	3	4	3	3	3	2	3	2	3	4	30	60
	42	2	3	3	3	3	3	3	3	3	3	29	58
	42	2	3	3	3	3	3	3	3	3	3	29	58
	43	3	3	3	3	3	3	5	2	3	3	31	62
	44	3	4	4	3	3	3	3	3	4	3	33	66
	45	3	3	4	1	4	4	3	3	4	3	32	64
	46	3	4	4	3	4	2	4	3	4	3	34	68
	47	3	4	3	3	3	3	3	3	4	3	32	64
	48	3	4	3	3	3	3	5	5	3	3	35	70
		1	2	3	4	5	6	7	8	9	10	total	%
items	49	3	3	4	5	3	2	3	3	4	3	33	66
	50	3	3	3	3	3	3	4	4	4	3	33	66
Total =		151	154	159	151	178	156	155	160	171	161		

2) Bottom 27% subjects
N = 10

		Subjects 1	2	3	4	5	6	7	8	9	10	total	%
items	1	1	3	3	1	3	2	2	3	2	3	23	46
	2	1	2	2	1	2	2	2	2	2	2	18	36
	3	1	1	2	2	1	2	3	2	3	1	17	34
	4	3	3	3	3	4	3	3	3	3	3	31	62
	5	3	2	2	1	3	2	1	3	2	2	21	42
	6	3	3	3	3	3	2	2	1	2	1	23	46
	7	2	3	2	2	3	2	3	3	2	1	23	46
	8	2	3	3	3	3	2	2	3	3	3	27	54
	9	3	3	3	3	3	3	2	3	3	3	29	58
	10	2	1	2	1	3	4	2	4	3	3	25	50
	11	3	1	2	1	3	2	2	3	3	3	24	48
	12	2	1	3	1	3	2	1	2	2	2	19	38
	13	3	3	3	1	3	3	1	3	2	3	25	50
	14	2	1	2	3	3	3	2	1	2	1	20	40
	15	2	1	2	1	1	1	1	1	2	1	13	26
	16	3	3	3	3	3	2	2	3	3	3	28	56
	17	2	2	1	1	2	3	4	1	3	1	21	42
	18	2	3	3	1	2	1	3	2	3	3	23	46
	19	1	3	3	1	3	4	3	3	2	3	26	52
	20	1	3	3	1	3	3	3	3	3	1	24	48
	21	1	3	3	1	3	4	3	1	1	3	26	52
	22	2	2	3	1	3	3	3	3	3	3	26	52
	23	1	1	3	3	3	1	2	3	3	3	23	46
	24	1	3	2	1	3	1	3	1	3	3	21	42
	25	1	1	2	3	3	2	3	3	1	3	22	44
	26	4	3	4	3	3	3	2	2	3	3	30	60
	27	1	3	2	1	3	2	3	2	3	3	23	46
	28	3	3	2	1	3	2	2	2	3	1	22	44
	29	4	1	2	1	3	3	3	3	2	1	23	46
	30	1	3	3	1	3	3	2	3	3	3	25	50
	31	3	2	3	1	3	3	2	3	3	2	25	50
	32	1	2	3	1	3	2	3	3	1	3	23	46
	33	1	3	3	1	2	2	2	3	3	1	21	42
	34	1	1	3	1	2	2	3	2	3	3	21	42
	35	3	1	2	3	3	2	3	3	3	4	27	54
	36	3	3	3	1	2	3	3	3	2	3	26	52
	37	1	2	2	2	2	4	3	2	3	4	25	50
	38	1	3	2	2	3	3	3	3	3	3	26	52
	39	1	3	2	2	3	2	2	3	3	3	24	48
	40	1	3	3	1	3	3	3	2	1	3	23	46
	41	1	3	2	1	2	2	2	2	3	3	21	42
	42	1	2	2	1	1	2	2	2	1	3	19	38
	43	3	2	2	1	3	2	2	2	1	3	21	42
	44	1	3	3	1	1	2	1	4	3	3	22	44
	45	3	3	2	1	1	4	3	1	1	1	21	42
	46	1	3	2	1	3	2	3	2	3	3	23	46
	47	1	2	3	1	3	2	3	2	1	3	21	42
		1	2	3	4	5	6	7	8	9	10	total	%
items	48	3	2	2	1	3	4	3	2	1	3	25	50
	49	3	2	3	1	2	2	1	3	3	3	23	46
	50	3	3	2	4	3	2	3	1	1	1	23	46
Total		94	119	123	99	130	128	127	124	121	127		

APPENDIX D4

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
PERCEPTION OF PERSONAL ACHIEVEMENT																																							
Item 1	4	3	3	4	1	3	3	3	3	4	4	4	3	3	1	3	3	3	4	4	3	3	3	4	3	3	3	3	3	4	3	4	3	3	3	3	3	117	
6	3	3	3	4	3	3	3	3	3	3	4	3	3	3	3	3	3	4	4	3	3	4	3	3	4	2	2	2	1	1	2	1	1	1	1	1	1	98	
11	3	3	3	3	3	1	3	3	2	3	3	3	3	2	1	3	3	4	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	4	3	105	
16	3	3	3	4	3	3	2	2	3	3	3	3	3	3	3	3	3	4	3	3	4	3	4	3	3	3	2	2	3	3	3	3	3	3	4	3	2	105	
21	3	4	3	4	1	3	4	3	3	3	3	3	4	3	2	3	4	4	4	2	3	4	4	3	3	3	4	3	1	3	1	1	1	3	1	1	3	106	
26	4	3	3	3	4	3	2	3	4	2	4	4	4	4	3	3	4	4	4	2	3	4	3	3	3	4	3	4	4	3	3	3	4	3	4	4	2	125	
31	3	2	3	3	3	2	3	3	3	2	3	2	3	3	1	3	3	2	2	2	3	3	3	3	3	3	3	2	3	3	3	3	3	2	2	4	3	100	
36	2	3	3	3	3	3	2	4	3	4	2	3	4	3	1	2	3	2	3	2	2	2	3	3	3	3	3	3	3	3	2	2	4	3	4	4	3	102	
41	3	4	2	3	1	3	3	3	2	3	4	3	3	2	1	2	3	3	2	3	3	2	3	2	4	3	2	2	2	3	3	2	2	3	2	4	3	98	
46	3	4	3	4	1	3	2	3	2	3	3	3	3	2	1	3	3	4	2	3	4	3	4	2	3	2	2	3	2	3	3	3	3	3	3	4	3	105	Mean = 28.7
Sub-total	31	32	29	35	23	27	27	30	28	31	33	31	33	28	16	28	32	34	31	27	31	31	33	29	32	29	26	26	25	29	26	25	27	27	27	32	26	1061	S.D. = 3.5
																																							S.E. = 0.58
SENSE OF PROFESSIONAL RECOGNITION																																							
Item 2	3	3	2	3	1	3	2	3	2	2	3	4	3	3	1	3	3	3	3	3	4	3	3	2	4	3	4	2	2	3	3	3	3	3	3	3	3	104	
7	3	3	3	4	2	3	3	3	2	3	3	3	3	3	2	3	4	4	3	3	3	3	3	3	3	3	2	3	3	3	2	2	2	1	3	3	2	105	
12	3	3	3	3	2	1	3	3	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	2	3	3	2	3	2	3	2	3	2	3	3	4	3	105	
17	3	3	2	3	2	2	3	3	1	2	3	2	3	3	1	2	2	4	2	3	3	3	4	3	3	3	3	4	1	2	3	1	1	1	1	1	1	87	
22	3	4	4	3	2	2	4	3	3	3	3	3	4	4	1	3	4	4	4	2	3	4	4	3	3	3	3	3	3	4	3	3	4	3	4	3	4	120	
27	4	3	2	3	1	3	1	3	2	3	3	4	3	3	1	3	4	4	4	2	3	4	3	3	3	3	2	3	2	3	3	3	4	3	3	4	3	108	
32	3	3	3	3	1	2	3	3	3	3	2	2	3	3	1	3	3	3	3	3	4	4	4	3	4	3	2	3	3	3	1	3	3	3	4	3	3	106	
37	3	3	3	3	1	2	4	2	2	3	3	2	4	3	2	2	4	3	2	3	3	3	3	3	4	3	4	3	2	1	3	1	2	4	1	1	4	98	
42	2	3	3	3	1	2	3	4	2	3	2	3	3	4	1	1	3	3	3	3	4	3	3	3	3	2	2	4	2	3	1	3	3	3	2	4	1	98	
47	3	4	1	2	1	2	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3	3	4	3	3	3	2	3	2	3	1	3	3	3	3	2	3	102	Mean = 27.9
Sub-total	30	32	27	31	14	22	29	30	23	29	28	29	32	32	14	26	33	35	30	28	32	33	34	28	33	30	26	31	22	28	22	25	27	27	27	28	26	1033	S.D. = 4.6
																																							S.E. = 0.77

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
PERCEPTION OF PERSONAL GROWTH																																							
Item 3	1	2	2	2	1	1	2	3	2	2	2	3	3	2	2	1	1	3	4	3	3	3	3	3	4	2	2	3	2	3	3	3	3	1	4	2	2	92	
8	3	2	3	4	2	3	4	3	3	2	4	4	3	3	3	3	3	4	3	3	4	3	4	4	3	3	2	2	3	3	3	4	4	3	4	3	3	117	
13	3	3	3	4	3	3	2	2	3	2	3	3	4	4	1	3	3	4	3	3	3	4	4	3	3	3	3	1	3	3	2	3	3	3	3	4	3	110	
18	3	3	3	3	2	3	4	3	3	3	4	2	2	3	1	2	2	3	2	3	3	4	4	3	3	3	1	3	2	3	3	2	2	3	3	4	2	102	
23	2	3	3	3	1	1	2	3	3	3	3	2	2	3	3	3	3	4	2	2	3	3	4	2	3	2	1	2	3	3	3	3	4	3	3	2	3	98	
28	3	3	3	3	3	3	2	3	2	3	3	2	3	2	1	3	4	4	3	3	3	3	3	2	3	2	2	2	2	2	3	1	2	1	1	1	3	92	
33	4	3	2	3	1	3	4	3	3	2	2	3	2	3	1	4	2	3	4	3	4	3	3	3	3	2	2	2	3	3	3	3	2	1	4	4	4	105	
38	4	3	3	4	1	3	3	3	2	3	3	3	2	2	2	3	4	4	4	3	3	4	4	3	3	3	3	3	3	3	3	3	2	3	4	3	4	113	
43	3	3	2	3	3	2	2	2	2	2	2	3	2	4	1	3	3	3	3	3	3	2	3	2	3	2	2	2	2	1	1	2	1	3	1	1	3	85	
48	3	4	3	3	3	2	3	3	2	3	3	3	3	3	1	3	3	3	3	3	3	2	3	3	3	3	4	3	2	3	1	2	3	3	4	4	3	103	Mean = 27.5
Sub-total	29	29	27	32	20	24	28	28	25	25	29	28	24	29	13	25	28	35	31	29	32	31	35	28	31	25	22	23	25	27	25	26	26	24	31	28	30	101	S.D. = 4.13 S.E. = 0.68
ATTITUDES TOWARDS CHALLENGING WORK																																							
Item 4	3	3	4	3	3	3	3	3	3	4	3	3	3	3	3	4	3	4	4	3	3	4	4	4	4	3	3	3	3	4	3	4	3	3	4	4	3	124	
9	3	3	3	4	3	3	3	3	3	3	4	4	3	3	3	3	3	4	4	3	4	3	4	4	3	3	3	2	3	3	3	4	3	3	4	3	3	124	
14	3	3	3	3	2	1	3	2	2	2	4	3	3	3	3	3	3	4	3	3	3	4	3	3	4	3	3	2	1	2	2	1	1	1	1	1	1	92	
19	3	4	4	4	1	3	2	3	3	3	3	2	3	2	1	3	4	4	4	2	3	4	4	3	4	3	4	3	3	4	2	3	4	3	4	3	3	115	
24	3	3	3	4	1	3	1	3	2	3	3	2	2	3	1	3	3	4	3	3	3	2	4	3	3	2	3	3	3	3	3	1	4	3	3	2	3	101	
29	3	2	3	2	1	1	3	3	2	3	1	3	3	3	1	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	1	4	3	3	99	
34	4	3	2	3	1	1	3	3	3	3	3	4	4	2	1	2	3	4	3	3	3	4	3	3	4	3	2	3	2	3	3	3	3	3	4	4	3	108	
39	4	3	3	3	1	3	2	2	2	3	3	3	3	3	2	3	4	4	4	2	3	2	4	3	3	3	2	2	3	2	3	1	2	3	1	2	3	99	
44	3	4	3	4	1	3	1	3	3	3	1	3	3	4	1	1	3	3	3	3	4	3	4	3	3	3	2	1	4	3	3	4	1	3	4	4	3	101	
49	3	3	3	1	3	2	4	3	3	3	3	3	3	3	1	2	3	3	2	3	3	3	4	3	3	3	2	1	3	3	3	3	3	3	4	4	3	105	Mean = 28.9
sub-total	32	31	31	27	14	23	25	28	24	30	28	30	30	29	17	27	33	37	33	28	32	32	37	32	34	29	27	23	28	30	27	27	27	23	25	30	28	1068	S.D. = 4.69 S.E. = 0.77

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total
SENSE OF PROFESSIONAL RESPONSIBILITY																																						
Item 5	3	3	4	3	3	2	3	2	2	2	3	3	3	3	1	3	3	4	3	2	3	3	2	4	3	2	2	1	3	3	3	2	2	3	3	4	2	98
10	3	3	3	4	2	1	3	3	2	2	3	3	3	3	1	3	2	4	4	3	3	3	3	4	4	3	4	2	4	3	3	3	3	3	4	4	3	111
15	2	2	1	3	2	1	1	2	2	2	4	3	3	3	1	1	3	4	2	1	2	3	3	2	3	3	1	1	1	3	2	2	3	1	3	1	1	78
20	4	4	3	4	1	3	1	3	3	3	3	3	3	3	1	3	3	4	3	3	3	4	3	3	3	3	3	3	3	1	3	4	3	1	4	3	3	108
25	3	3	3	3	4	1	3	3	2	3	4	3	3	3	3	3	3	4	3	3	3	3	4	3	3	1	2	3	3	3	1	3	3	3	3	4	2	103
30	2	2	3	3	1	3	1	3	3	3	2	2	3	3	1	3	1	3	3	3	3	4	2	4	3	2	3	2	3	3	3	3	4	3	3	3	3	99
35	3	3	2	4	3	1	3	3	2	3	1	3	3	3	3	1	3	3	2	3	3	3	4	3	3	3	2	3	3	3	3	3	3	4	3	4	2	101
40	3	3	3	3	1	3	2	4	3	2	3	3	3	2	1	1	3	4	4	3	3	3	3	2	3	3	3	3	2	3	1	4	3	3	3	3	3	102
45	3	4	3	4	3	3	4	2	2	3	3	3	3	3	1	3	1	4	4	3	2	3	4	3	3	3	4	3	1	2	1	1	3	1	1	1	1	96
50	3	3	3	3	3	3	4	3	2	3	3	3	3	4	4	3	3	3	3	3	3	4	4	3	3	3	2	3	1	1	1	2	1	1	1	1	1	97
sub-total	29	30	28	34	23	23	25	28	23	26	28	29	30	30	17	24	25	37	31	27	28	33	32	31	31	26	27	24	24	25	21	27	28	26	28	28	21	993
TOTAL	151	154	142	159	94	119	134	144	123	141	137	147	139	144	99	130	151	178	156	139	155	160	171	148	161	139	128	127	124	139	121	130	135	127	138	146	131	

Mean = 26.8
S.D = 3.97
S.E. = 0.65

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 37) (First Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
PERCEPTION OF ACHIEVEMENT																																							
Item 1	3	4	4	3	3	3	4	3	4	4	3	4	4	4	4	4	3	4	3	3	4	4	4	4	2	3	3	3	3	4	3	5	4	4	2	3	3		
6	4	4	4	3	4	3	3	4	3	3	3	2	2	3	2	2	3	2	2	2	3	3	3	4	4	3	3	3	3	3	4	3	3	4	4	3	4		
11	4	3	4	3	3	3	3	3	3	3	3	4	3	4	3	4	3	3	4	3	3	3	2	3	3	2	3	3	3	3	3	3	3	3	2	3	4		
16	3	4	4	4	3	4	3	4	3	3	2	3	3	3	3	3	3	4	3	2	3	4	3	4	3	3	3	3	4	3	2	3	3	4	4	3	4		
21	4	4	3	3	4	3	4	3	4	4	3	2	3	2	2	2	3	2	2	3	3	3	3	3	2	3	5	3	4	3	4	3	4	4	2	3	4		
26	4	3	3	3	4	4	3	4	3	3	4	4	3	3	3	4	3	4	4	2	4	2	3	4	4	2	3	4	4	3	3	4	5	5	4	3	4		
31	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	2	4	3	3	3	3	3	3	3	3	3	3	4	3	3	3	4	2	3	2		
36	3	3	4	3	3	3	3	3	3	3	3	3	4	2	3	4	3	4	4	4	2	3	3	3	3	3	2	5	3	5	3	3	4	4	2	4	2		
41	3	3	3	3	3	4	3	4	3	3	3	2	4	3	3	2	3	2	4	3	3	4	3	3	2	3	3	3	3	3	4	4	3	3	3	4	3		
46	4	3	3	4	4	3	3	3	4	2	3	2	4	3	4	3	3	3	4	3	3	3	4	4	2	4	2	3	3	4	4	3	3	3	2	3	4		Mean = 31.4
sub-total	35	34	35	32	34	33	32	34	33	31	29	29	33	30	30	31	29	29	32	29	31	32	31	35	26	29	31	32	33	35	33	34	35	36	25	32	34	1160	S.D. = 3.24 S.E. = 0.53
SENSE OF PROFESSIONAL RECOGNITION																																							
Item 2	3	4	4	5	4	4	4	4	3	5	3	4	3	3	4	4	4	3	3	3	4	3	3	4	2	3	3	3	3	3	3	4	3	3	2	3	3		
7	4	3	4	3	4	3	3	3	3	3	4	3	3	2	3	3	2	3	3	2	3	3	3	5	3	3	4	3	3	4	3	3	3	3	3	3	3		
12	4	3	4	3	4	3	3	3	3	3	4	2	3	3	4	3	3	3	4	3	3	3	3	3	3	2	4	3	4	4	3	3	3	4	4	3	4		
17	4	3	4	3	4	4	3	3	4	4	4	2	2	3	2	2	2	2	4	2	3	3	2	3	3	3	5	3	2	3	3	2	3	3	2	2	3		
22	3	5	3	4	5	3	3	4	4	4	3	3	4	3	3	4	3	4	3	5	3	4	5	3	3	3	2	3	3	3	3	3	4	3	2	3	4		
27	3	5	3	3	4	4	3	3	4	2	3	2	3	3	3	4	3	3	4	3	4	3	2	3	2	3	3	2	2	4	4	5	3	4	3	3	4		
32	4	3	3	4	4	4	3	5	3	2	3	3	4	2	3	3	3	4	3	3	3	3	3	3	2	3	4	3	3	3	4	2	3	3	3	3	4		
37	4	2	3	3	3	3	2	5	3	4	3	2	2	3	2	2	4	2	2	4	3	3	3	3	4	2	3	4	2	3	3	3	4	3	2	3	2		
42	3	3	3	4	3	3	3	3	3	2	4	3	4	2	3	3	3	3	4	2	2	3	3	3	4	2	3	3	3	3	3	3	3	3	3	2	3		
47	3	3	3	3	3	3	4	3	3	2	3	2	4	2	4	3	3	4	2	3	3	4	2	3	2	3	3	3	3	3	3	3	4	3	3	4	4		Mean = 31.3
sub-total	35	35	32	34	38	34	30	36	33	31	34	26	32	25	31	31	30	30	32	29	31	32	29	33	26	25	34	30	28	34	32	31	33	32	27	29	33	1157	S.D. = 3.04 S.E. = 0.5

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 37) (First Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
PERCEPTION OF PERSONAL GROWTH																																							
Item 3	4	5	4	4	3	3	4	4	3	3	4	3	4	4	4	4	2	4	3	3	2	3	3	3	2	2	3	3	3	3	3	4	3	3	3	2	2		
8	3	3	3	5	3	3	5	3	4	3	3	4	4	4	5	5	4	4	4	4	4	3	4	5	3	4	4	3	4	3	4	5	3	4	4	4	3		
13	4	3	3	4	4	4	4	3	4	4	2	4	4	3	4	4	4	3	5	4	4	4	4	5	4	4	3	2	4	3	3	4	4	5	2	4	3		
18	3	2	3	4	5	3	3	4	4	2	3	2	3	4	4	3	4	3	5	3	4	3	4	3	3	3	4	3	3	4	4	3	3	3	2	3	3		
23	4	3	2	4	3	3	3	4	4	2	3	3	3	4	3	4	4	3	3	3	3	3	4	3	2	2	2	3	3	3	3	3	3	3	4	4	3		
28	4	4	3	4	3	3	3	4	3	3	3	2	2	4	2	2	2	2	2	3	4	3	2	3	3	3	2	3	2	3	3	3	4	2	2	4	4		
33	3	4	4	5	4	5	4	4	3	3	3	3	3	4	3	3	2	5	4	4	5	3	3	3	2	3	4	4	3	2	2	4	3	3	2	5	2		
38	4	3	3	4	5	5	4	4	3	4	3	3	3	4	3	2	3	4	3	4	5	3	2	4	2	3	3	4	3	3	3	4	3	3	3	4	4		
43	3	3	3	4	3	4	3	4	3	3	2	2	2	2	2	2	3	2	2	3	3	4	3	3	3	3	3	3	3	2	3	4	3	4	2	4	3		
48	3	3	3	4	3	5	4	4	3	4	3	3	3	2	2	3	3	4	4	3	3	4	3	3	3	3	4	4	3	3	4	4	4	3	3	4	3		Mean = 33
sub-total	35	33	31	42	37	38	37	38	33	31	30	29	31	35	32	32	31	34	34	34	39	33	32	35	26	29	33	32	31	29	33	38	31	33	24	35	30	1220	S.D. = 3.62 S.E. = 0.6
ATTITUDES TOWARDS CHALLENGING WORK																																							
Item 4	4	4	4	4	4	4	5	5	4	4	4	3	5	4	5	4	4	5	5	4	4	4	5	4	4	4	4	3	3	3	3	3	3	3	3	3	3		
9	4	4	4	5	3	4	5	3	4	4	3	3	3	4	5	4	4	5	3	4	4	4	3	5	4	4	4	3	4	3	2	4	3	3	3	4	3		
14	4	3	4	4	4	3	3	5	4	4	3	2	2	3	2	2	2	2	2	2	4	4	3	4	3	2	4	3	2	3	3	3	3	3	3	3	4		
19	4	4	3	4	4	5	3	5	4	5	4	3	4	3	3	5	3	4	3	3	4	5	4	5	2	3	3	2	3	3	3	2	3	3	2	3	3		
24	4	3	4	3	2	5	3	3	2	4	4	3	3	3	2	5	3	3	2	3	4	3	3	5	2	5	2	3	2	3	2	2	4	2	2	3	4		
29	3	3	4	3	4	3	3	3	3	4	4	3	3	2	3	3	2	4	3	3	4	2	3	2	2	2	4	3	2	3	3	3	3	3	2	3	3		
34	4	3	4	3	5	3	4	4	3	3	4	2	2	3	3	3	3	4	4	3	4	3	2	3	3	2	4	3	3	3	3	4	2	2	2	2	4		
39	3	5	3	3	3	4	3	3	4	3	3	3	4	3	2	2	3	2	2	3	3	3	3	3	2	4	3	2	2	2	3	3	3	3	2	3	3		
44	3	4	4	4	4	4	3	3	4	3	2	4	3	3	5	2	3	4	4	4	4	4	4	4	2	4	2	3	3	3	4	3	3	3	2	2	3		
49	4	3	4	3	4	4	3	3	4	3	2	3	3	3	3	3	3	4	4	3	4	3	5	2	4	3	3	3	3	4	3	2	3	4	2	2	3		Mean = 32.3
sub-total	37	36	38	36	37	39	35	37	36	37	33	30	32	31	32	33	27	29	31	31	39	35	35	33	25	33	34	28	25	30	29	29	30	29	23	28	33	1195	S.D. = 4.09 S.E. = 0.67

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 37) (First Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total
SENSE OF PROFESSIONAL RESPONSIBILITY																																						
Item 5	4	4	3	3	4	4	3	4	4	3	3	2	4	3	4	3	2	3	2	3	3	3	3	3	3	2	3	4	3	3	3	3	3	3	3	4	3	
10	3	4	5	4	4	4	4	4	5	4	5	3	5	3	4	4	3	3	2	2	2	3	3	4	3	3	4	3	3	3	4	3	3	3	3	4	3	
15	4	4	2	2	2	3	3	2	4	4	2	2	2	3	3	2	3	2	3	2	4	2	2	3	4	3	3	3	3	2	2	3	2	4	3	4	3	
20	4	4	3	3	3	5	4	3	4	4	3	4	4	2	4	4	3	2	4	4	3	2	4	3	3	3	5	2	2	2	3	4	3	3	3	3	4	
25	4	3	3	3	3	4	5	5	4	2	2	4	4	3	2	3	3	3	3	3	4	4	3	3	3	5	3	4	3	3	3	3	3	4	3	3	2	
30	2	3	3	3	3	3	2	4	4	3	3	3	4	3	4	3	5	3	4	4	3	3	2	2	3	4	3	2	2	2	3	4	3	3	3	4	3	
35	4	4	2	3	3	3	4	3	4	3	2	4	4	3	4	3	3	4	3	3	4	3	3	4	2	2	5	3	3	3	3	3	3	2	4	4	3	
40	4	4	5	4	3	3	3	4	4	3	3	4	3	3	2	4	3	3	5	2	2	3	3	3	5	3	3	2	2	2	4	4	2	3	3	3	4	
45	2	3	5	3	3	4	4	4	3	3	5	4	2	2	2	2	3	2	3	5	2	3	3	2	3	3	5	3	2	4	2	3	3	3	3	3	5	
50	4	4	3	3	4	4	4	3	4	3	2	4	2	2	2	2	2	2	2	5	3	4	3	3	3	3	3	3	2	4	4	3	3	3	4	4	3	
sub-total	35	37	35	31	32	38	37	36	40	31	31	34	34	27	31	30	30	30	32	33	30	30	29	29	32	31	37	28	33	28	31	33	28	30	32	36	33	1194

Mean = 32.3
S.D. = 3.14
S.E. = 0.54

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 30) (Second Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total	
PERCEPTION OF PERSONAL ACHIEVEMENT																																
Item 1	4	5	4	4	4	5	4	4	4	4	4	4	4	4	5	4	5	5	4	4	4	3	4	4	3	4	4	4	5	3		
10	3	2	2	4	2	2	2	2	4	2	4	3	3	3	2	2	2	2	2	3	4	3	3	3	2	3	3	2	2	2		
11	2	4	4	3	2	4	4	4	3	2	2	2	4	3	3	2	3	4	4	3	2	3	3	3	2	4	4	3	2	2		
16	3	3	3	5	4	3	4	3	4	2	3	4	3	3	3	5	5	4	4	3	4	3	3	3	4	5	4	3	3	3		
21	2	2	2	3	2	1	2	2	2	2	2	3	3	2	2	3	2	4	3	3	3	2	2	3	3	4	2	2	2	2		
26	4	4	3	3	4	5	4	5	4	3	4	3	3	4	3	4	5	5	4	4	3	3	3	5	4	3	3	3	3	3		
31	4	3	3	3	4	3	4	4	3	3	4	3	3	3	4	3	4	3	3	3	4	3	3	3	4	4	3	2	3	3		
36	3	4	4	3	3	4	4	4	4	4	3	3	3	3	4	5	4	4	3	4	3	3	4	3	3	3	4	4	3	3		
41	4	4	3	3	2	4	3	4	4	2	4	3	2	2	2	3	4	3	4	3	3	2	4	3	4	2	3	3	3	3		
46	4	5	4	4	2	4	4	4	4	3	4	4	3	5	3	3	4	5	4	2	3	3	4	4	4	5	3	4	3	3		Mean = 33
sub-total	33	36	32	34	30	35	35	36	36	27	34	32	31	32	31	34	38	39	35	32	32	28	33	34	33	37	33	29	29	27	990	S.D. = 3.07 S.E. = 0.56
SENSE OF PROFESSIONAL RECOGNITION																																
Item 2	3	4	3	3	3	3	4	3	3	3	3	3	3	3	4	4	4	3	3	3	4	5	4	3	3	3	4	3	4	3		
7	4	2	4	3	3	2	4	2	3	2	4	2	3	3	3	3	2	4	4	2	3	2	3	3	2	3	4	4	4	3		
12	2	2	4	3	3	3	4	3	4	2	3	2	2	3	3	2	2	3	3	3	3	4	4	3	2	2	3	3	3	3		
17	2	2	3	4	2	2	2	2	2	3	2	3	4	3	3	3	3	2	4	3	2	2	2	3	4	3	2	2	3	2		
22	4	3	4	2	3	5	3	4	3	2	3	3	4	2	5	2	4	3	4	3	5	3	2	3	4	4	3	3	3	3		
27	4	4	4	2	2	5	4	4	3	2	4	4	3	2	4	3	2	2	5	4	2	3	2	2	3	3	3	3	3	3		
32	2	4	2	2	2	3	4	4	4	2	3	3	2	2	4	3	2	3	3	2	3	4	4	3	2	2	2	3	3	2		
37	3	2	3	3	4	3	2	3	5	4	3	3	2	3	3	2	3	3	4	4	5	3	4	3	2	3	3	4	4	4		
42	2	4	2	2	3	2	3	5	3	2	2	3	4	2	3	3	2	2	4	3	3	2	2	3	2	4	2	3	3	3		
47	3	5	3	3	2	3	2	4	3	2	3	4	5	4	4	3	2	3	3	5	3	3	2	3	4	2	3	2	3	2		Mean = 30.4
sub-total	29	32	33	27	27	31	32	34	33	25	27	30	32	27	36	28	26	28	37	32	33	31	29	29	28	29	29	30	33	30	912	S.D. = 2.92 S.E. = 0.53

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 30) (Second Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total	
PERCEPTION OF PERSONAL GROWTH																																
Item 3	2	4	4	5	3	3	4	4	1	2	4	4	3	5	3	3	4	2	4	2	3	2	2	2	3	3	4	4	3	2		
8	4	4	4	2	4	3	4	4	4	2	2	3	4	4	3	2	3	3	3	3	2	2	4	3	4	4	4	3	4	3		
13	4	3	3	4	4	4	4	4	3	2	4	4	3	3	4	2	2	4	4	3	3	4	4	4	3	3	4	4	4	4		
18	3	4	3	4	3	3	4	4	3	2	3	3	4	3	3	3	2	3	4	3	3	3	3	3	3	3	3	2	3	3		
23	2	3	2	2	2	3	4	4	3	2	2	2	2	3	4	2	4	3	3	4	3	3	2	2	2	4	2	3	3	2		
28	3	2	4	3	4	2	2	3	1	3	3	2	3	1	2	3	3	3	2	2	2	4	2	3	3	3	3	2	2	3		
33	2	4	3	2	3	3	2	3	3	2	2	2	4	3	3	3	4	2	3	3	2	3	3	3	2	3	2	3	3	3		
38	3	4	3	4	2	5	3	4	3	3	3	4	4	3	4	5	3	3	4	3	3	3	4	3	3	4	3	3	3	3		
43	3	2	2	2	3	2	2	3	3	3	3	3	2	3	2	1	2	3	3	2	2	2	4	2	3	3	2	2	2	2		
48	3	5	3	3	4	4	4	4	3	3	3	4	4	3	2	3	3	4	4	3	4	3	3	4	4	3	3	3	3	3		Mean = 29.8
																																S.D. = 2.73
																																S.E. = 0.5
sub-total	27	33	29	31	29	30	33	37	27	23	29	31	33	31	30	27	30	30	34	28	27	29	31	29	33	33	30	29	30	28	925	
ATTITDUES TOWARDS CHALLENGING WORK																																
Item 4	4	4	3	4	4	5	4	3	5	4	4	3	4	5	4	4	4	5	5	4	4	4	3	5	3	5	4	3	4	3		
9	3	4	4	4	3	5	4	4	3	3	3	4	4	3	3	3	4	5	3	3	3	4	4	4	5	5	3	3	3	3		
14	2	4	2	2	2	2	2	3	2	4	2	2	3	3	3	2	4	4	3	2	4	3	3	3	3	4	4	3	2	3		
19	4	3	4	4	4	5	4	4	1	2	3	4	3	3	4	4	3	3	3	2	3	3	4	3	3	2	4	3	3	3		
24	2	4	2	3	2	4	3	4	3	3	4	2	4	3	2	4	4	3	4	3	3	2	4	2	4	3	3	2	4	2		
29	2	4	4	4	4	4	4	4	1	2	3	3	3	4	2	2	4	3	3	4	3	2	2	3	4	3	3	2	3	3		
34	2	4	2	3	4	3	4	4	4	2	2	4	3	3	4	3	4	3	3	3	3	4	2	3	3	4	3	4	3	3		
39	3	2	3	2	4	2	4	2	5	4	4	2	2	3	4	2	3	3	2	4	5	4	2	3	3	2	4	3	3	3		
44	4	5	4	4	4	5	4	4	4	4	4	5	4	4	3	3	4	3	4	4	3	4	4	3	5	4	3	3	4	3		
49	2	5	4	3	4	2	4	4	1	2	3	3	4	3	2	4	5	4	4	3	2	3	4	2	4	3	2	4	4	2		Mean = 32.8
																																S.D. = 3.09
																																S.E. = 0.56
sub-total	28	38	32	33	37	37	37	36	29	30	32	32	34	34	31	31	39	36	34	32	28	29	32	31	37	35	33	33	33	28	983	

Job Satisfaction Profile
Total Scores Obtained by the Experimental Group (N = 30) (Second Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total
SENSE OF PROFESSIONAL RESPONSIBILITY																															
Item 5	2	4	3	4	4	4	4	4	3	3	3	3	2	3	3	2	3	2	2	3	4	3	4	2	3	3	4	3	3	3	
10	4	4	4	5	4	4	4	4	1	3	4	4	4	3	3	2	3	4	3	3	4	3	3	3	2	4	5	4	3	4	
15	2	4	2	2	3	3	2	4	3	2	2	2	2	3	4	3	3	3	2	2	4	3	2	2	2	3	3	3	3	3	
20	3	4	3	3	4	5	4	4	4	3	5	3	3	3	4	4	2	4	4	4	5	3	3	3	4	2	4	3	3	3	
25	3	4	3	3	4	3	2	3	3	4	4	4	3	3	4	3	2	3	4	3	5	3	2	3	2	3	3	3	4	3	
30	4	4	4	3	4	4	4	3	4	3	3	3	3	3	3	4	4	2	3	5	4	3	2	4	2	3	4	3	3	3	
35	3	3	3	5	4	4	3	3	4	3	3	4	5	3	3	4	3	3	3	3	4	4	4	3	3	3	4	4	4	3	
40	4	4	5	3	4	4	3	5	5	3	4	4	3	3	4	3	3	3	4	4	3	4	3	4	3	3	3	3	3	3	
45	4	2	2	2	4	3	4	2	2	4	2	2	3	3	3	2	4	4	3	3	2	4	4	4	3	4	4	3	3	4	
50	3	2	3	3	3	2	2	3	5	2	3	3	2	4	3	2	4	3	3	3	2	4	3	3	4	3	4	3	4	3	
sub-total	30	35	32	31	38	33	32	38	34	29	33	30	30	32	35	30	32	32	32	34	38	34	29	31	28	31	38	32	33	32	980

Mean = 32.6
S.D. = 2.75
S.E. = 0.5

APPENDIX D5

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
PERCEPTION OF PERSONAL ACHIEVEMENT																																							
Item 1	2	3	3	2	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	4	2	3	3		
6	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	1	3	1	1	3	1	1	2	1	1	1	2	2	3	1	3	2	1	3	3	3	3		
11	4	3	3	3	3	3	2	1	3	3	3	2	3	2	2	3	3	3	3	1	3	3	2	3	4	3	3	2	2	3	2	3	3	3	3	2	3		
16	4	3	4	3	3	4	3	3	4	3	1	3	3	3	3	3	3	3	4	3	3	3	3	2	3	1	3	3	3	3	2	3	3	2	3	3	1		
21	4	4	4	3	3	4	3	2	3	4	3	4	4	3	1	1	1	1	2	1	3	1	1	1	3	3	2	3	3	1	3	3	2	2	4	2	3		
26	4	3	2	4	3	4	3	3	4	3	2	4	4	2	4	4	3	4	3	1	3	3	3	3	4	3	4	3	3	3	3	3	2	3	3	2	4		
31	3	3	2	3	3	2	2	3	4	3	3	2	2	2	3	3	3	2	2	3	2	3	3	3	2	3	3	3	2	3	4	4	3	3	3	4	3		
36	4	3	2	4	3	4	2	3	4	3	2	4	3	2	3	3	4	4	3	1	3	3	3	3	3	4	3	3	2	3	3	3	3	3	4	4	3		
41	4	2	2	3	3	3	2	3	3	2	3	3	3	3	2	3	3	2	3	3	2	3	1	3	1	2	3	2	3	3	3	2	2	3	3	3	2		
46	4	3	2	2	3	3	2	3	4	2	3	3	3	2	3	3	1	3	3	3	2	3	2	3	3	2	3	3	3	3	2	3	3	2	3	4	2		
sub-total	36	30	27	31	31	34	25	27	35	29	27	31	31	26	27	27	27	26	27	22	25	26	23	25	27	25	29	28	28	26	28	29	25	28	31	30	27	1036	Mean = 28 S.D. = 3.06 S.E. = 0.5
SENSE OF PROFESSIONAL RECOGNITION																																							
Item 2	3	3	4	1	2	3	1	3	4	3	4	2	3	2	3	2	3	3	3	2	3	3	3	2	3	3	3	1	1	3	4	1	3	3	3	3	3		
7	3	3	2	3	3	3	3	1	3	3	3	3	2	3	3	3	2	3	3	1	3	3	2	2	3	2	3	3	2	2	3	3	1	3	3	2	4		
12	2	3	2	2	3	3	2	3	3	3	3	3	2	3	3	3	3	3	3	3	2	3	2	3	3	3	3	2	2	3	4	2	3	3	3	2	3		
17	2	3	3	3	3	3	3	2	3	3	3	3	3	1	1	1	1	3	1	3	2	1	2	2	3	2	1	2	2	1	2	3	1	3	4	3	2		
22	4	3	4	4	3	4	3	2	3	4	3	4	4	3	4	4	1	3	4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	4	4	2	2		
27	4	2	2	3	3	3	2	3	3	3	2	2	3	1	4	2	1	2	3	2	2	3	2	3	2	2	3	3	1	3	3	3	4	4	3	2	1		
32	2	3	2	2	2	3	3	1	2	3	3	3	2	3	3	3	1	2	3	1	2	3	1	2	3	1	3	3	3	3	1	1	3	3	4	2	2		
37	3	3	2	2	3	2	2	3	2	3	3	3	3	2	3	3	1	1	1	2	4	1	3	3	1	1	2	1	3	1	3	3	2	3	2	1	1		
42	3	3	2	2	3	3	2	3	3	3	3	3	2	3	3	1	1	1	2	1	2	3	2	2	3	1	2	2	3	3	2	3	2	2	2	3	2		
47	2	2	3	3	3	3	2	2	4	3	3	2	2	3	3	3	1	2	3	3	2	3	2	3	3	2	3	3	3	3	3	3	2	4	2	2	3		
sub-total	27	28	26	25	28	30	23	23	30	31	30	28	26	24	30	25	15	23	28	21	25	26	23	24	27	21	26	23	23	25	26	25	24	32	30	22	23	956	Mean = 25.8 S.D. = 3.38 S.E. = 0.56

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total	
PERCEPTION OF PERSONAL GROWTH																																							
Item 3	3	2	2	1	3	3	3	3	3	4	2	3	3	2	1	3	3	1	2	1	3	2	1	2	1	2	2	3	2	1	2	3	4	3	1	2	3		
8	3	3	4	3	3	4	3	3	4	3	3	2	4	3	3	3	4	3	3	2	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3		
13	3	3	3	3	2	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	2	3	2	2	3	2	3	1	1	3	3	2	3	2	2	3	3		
18	2	3	3	2	3	3	3	3	3	3	3	3	3	2	3	2	4	3	2	2	3	3	2	3	1	3	3	3	2	3	2	3	3	3	3	4	4		
23	3	3	2	2	2	3	3	2	3	4	3	3	3	3	3	2	1	3	2	1	2	2	1	3	2	3	3	3	2	3	1	3	2	3	3	1	2		
28	3	2	2	3	3	3	2	3	4	3	2	2	3	2	1	1	4	2	3	3	2	3	1	1	4	1	2	1	1	1	2	2	1	3	2	2	3		
33	4	2	2	2	2	4	2	1	3	3	3	2	2	2	2	3	2	1	4	1	3	3	1	3	3	3	3	2	3	3	2	2	3	2	2	2	3		
38	4	2	4	4	4	2	2	2	2	4	3	4	4	3	3	3	3	1	4	3	3	1	1	3	4	3	3	4	4	3	3	2	2	3	4	3	4		
43	4	2	4	3	2	4	2	3	3	1	3	3	2	3	2	1	1	3	1	1	2	1	1	1	1	1	1	1	1	1	2	2	3	2	2	4	4		
48	2	2	3	3	3	3	2	3	4	3	3	3	3	3	3	3	3	2	3	2	2	3	3	3	3	3	3	3	3	3	2	3	3	2	3	3	2		Mean = 26.1
sub-total	31	24	29	26	28	32	25	26	32	31	28	26	30	26	24	24	27	22	27	19	25	24	16	24	26	24	26	25	23	24	21	24	27	26	25	27	31	966	S.D. = 3.41 S.E. = 0.56
ATTITUDES TOWARDS CHALLENGING WORK																																							
Item 4	4	3	4	3	3	4	3	3	3	4	3	3	3	3	3	3	4	3	3	3	3	1	3	3	2	4	3	3	3	3	3	3	3	3	3	4	3		
9	3	3	3	3	4	4	4	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2	3	2	3	3	4		
14	3	2	3	3	2	3	3	3	4	3	3	2	3	2	2	1	1	1	1	1	1	2	1	2	1	2	1	1	1	1	4	4	2	2	1	2	3		
19	4	3	4	3	3	4	3	3	3	4	2	4	4	1	3	3	4	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	1	2	2	3		
24	3	3	3	3	2	3	3	3	1	3	2	3	3	3	3	3	1	3	1	1	2	3	2	3	1	3	3	3	3	3	3	3	4	3	1	3	4		
29	2	2	3	2	3	3	2	1	3	3	2	2	3	3	3	3	1	3	2	2	1	3	2	1	3	3	3	3	3	3	4	2	3	3	3	3	3		
34	2	3	2	4	3	3	3	3	3	3	3	3	3	2	3	4	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3		
39	4	3	3	3	2	4	2	2	4	3	3	2	4	2	2	4	1	3	1	2	3	3	1	4	1	1	2	1	3	1	1	2	2	3	2	3	2		
44	4	2	4	1	3	4	2	3	2	3	3	3	3	3	3	3	3	2	4	3	3	3	2	3	3	3	3	3	3	3	2	3	3	2	4	3	2		
49	3	2	3	3	3	3	2	3	3	1	2	3	3	2	3	4	3	2	3	1	2	3	1	3	3	2	3	3	2	2	3	3	4	2	3	3	3		Mean = 26.8
sub-total	32	26	32	28	28	35	27	27	26	30	26	29	32	23	27	31	23	26	24	21	24	27	20	28	23	28	28	26	27	25	29	28	30	23	23	29	30	992	S.D. = 3.28 S.E. = 0.54

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 37) (Pre-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	Total
SENSE OF PROFESSIONAL RESPONSIBILITY																																						
Item 5	4	3	2	3	2	3	2	3	3	3	3	3	2	3	4	2	1	1	3	1	3	3	3	2	1	2	2	3	2	3	2	2	4	3	4	3	3	
10	3	3	3	2	3	2	3	3	3	3	3	2	3	3	2	3	1	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	2	2	2	3	
15	2	2	2	2	1	3	3	1	4	3	1	1	2	1	3	1	1	1	2	1	1	2	1	1	1	2	3	3	1	3	2	2	1	1	3	3	1	
20	4	3	4	3	3	3	3	3	1	3	2	3	2	3	3	3	1	3	1	1	3	3	1	3	1	3	4	1	3	3	3	1	3	3	2	3	2	
25	3	3	3	1	3	3	2	3	4	3	3	2	3	1	2	3	2	2	3	1	3	3	3	3	1	2	3	3	3	3	3	2	2	3	3	3	1	
30	2	3	2	2	2	4	2	2	3	3	2	3	3	3	4	1	2	3	3	1	2	3	2	3	3	2	3	2	2	3	3	2	1	2	2	2	2	
35	2	3	2	2	3	3	2	2	3	3	3	2	2	2	2	4	3	2	3	1	2	3	2	3	2	2	3	2	2	3	2	2	4	4	4	2	2	
40	4	2	3	3	4	3	2	1	2	2	3	4	4	3	4	3	3	3	4	1	3	3	2	3	3	4	4	3	1	2	3	3	2	3	2	3	3	
45	4	3	2	3	3	3	2	3	4	3	3	3	2	2	2	1	3	2	1	3	4	1	1	1	1	3	2	1	1	1	3	2	2	4	1	1	2	
50	3	2	3	3	3	3	2	3	4	3	3	3	3	3	1	1	1	2	1	2	2	1	1	1	1	1	1	1	2	1	3	1	2	3	3	3	3	
sub-total	31	28	26	24	27	30	23	24	31	29	26	26	26	24	27	25	18	24	24	15	26	25	19	23	17	24	28	22	21	25	27	20	24	28	26	25	22	910

Mean = 24.6
S.D. = 3.66
S.E. = 0.6

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 32) (First Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total	
PERCEPTION OF PERSONAL ACHIEVEMENT																																		
Item 1	3	4	3	3	3	4	3	3	3	2	3	3	4	3	4	3	3	3	3	3	4	3	3	3	2	2	3	4	3	3	3	3		
6	4	4	3	3	4	4	3	3	2	3	3	3	1	2	2	3	3	4	3	3	3	3	3	3	2	2	3	4	3	3	3	1		
11	4	3	3	3	3	3	3	3	2	3	1	3	3	4	4	2	3	4	3	2	3	2	3	3	1	3	3	3	2	3	1	3		
16	4	3	3	4	3	3	3	3	3	3	1	2	3	3	2	3	2	4	2	3	3	4	3	3	2	3	3	3	3	2	3	3		
21	4	4	2	3	4	3	2	4	1	2	3	3	2	1	3	4	3	4	2	3	2	3	4	3	2	3	4	3	3	4	2	2		
26	4	4	2	3	4	3	2	3	3	3	4	3	2	4	3	3	3	3	4	3	4	3	4	2	2	2	4	4	4	2	3	2		
31	2	4	2	3	3	4	4	3	3	3	3	3	3	4	2	3	3	3	3	3	3	2	3	2	2	3	3	3	3	3	3	3		
36	2	2	2	2	2	3	3	3	1	1	4	1	1	4	3	3	3	3	2	4	3	2	3	3	2	4	4	2	2	2	3	3		
41	2	3	2	3	2	3	3	4	4	3	3	3	3	4	3	3	3	4	2	2	3	3	3	3	2	3	3	4	2	3	3	3		
46	3	2	3	4	3	3	3	3	3	3	2	3	3	4	3	4	3	3	3	2	3	3	3	3	2	3	3	3	3	2	3	3		Mean = 27.9
sub-total	32	33	26	31	31	33	29	32	25	26	27	27	24	34	28	31	29	35	27	28	31	28	32	28	20	28	33	33	28	27	27	26	893	S.D. = 3.63 S.E. = 0.64
SENSE OF PROFESSIONAL RECOGNITION																																		
Item 2	2	3	3	2	2	2	4	3	3	3	2	2	3	2	3	3	3	3	1	3	2	3	3	3	1	2	3	3	3	3	3	3		
7	3	2	3	3	3	3	3	3	4	3	3	3	3	3	3	4	3	4	3	2	4	2	3	2	3	3	4	3	3	3	3	3		
12	1	1	2	2	2	3	3	4	4	1	3	3	3	3	2	3	3	3	2	4	4	1	2	2	3	3	3	3	1	1	2	1		
17	1	2	3	3	3	3	3	3	3	3	3	3	4	2	3	3	3	3	3	3	4	2	1	3	4	3	4	2	3	3	3	3		
22	2	1	2	3	3	3	4	3	1	2	2	2	2	3	3	3	3	3	2	2	3	4	1	3	2	3	1	4	3	2	3	3		
27	3	3	3	1	3	2	3	4	2	3	2	3	3	2	2	3	2	3	3	2	3	3	3	2	1	2	4	2	3	1	1	3		
32	3	1	3	3	1	2	3	2	4	1	3	3	3	3	3	4	2	4	2	2	2	3	2	2	3	3	2	3	4	3	3	1		
42	3	1	1	1	1	2	1	3	1	3	2	1	4	3	3	2	2	2	3	4	3	3	3	3	1	1	1	4	3	3	3	3		
47	1	2	3	3	3	2	3	3	3	2	2	3	2	2	3	3	3	4	3	3	3	2	3	2	3	3	3	3	4	2	3	3		Mean = 26.9
sub-total	22	19	24	24	24	24	31	30	27	22	25	26	31	26	28	31	26	32	26	29	31	26	22	25	26	26	27	30	31	24	28	26	861	S.D. = 3.24 S.E. = 0.57

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 32) (First Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
PERCEPTION OF PERSONAL GROWTH																																	
Item 3	3	4	3	3	3	3	3	3	2	2	3	3	3	2	1	4	3	3	3	3	3	4	3	3	3	3	2	3	3	3	2	3	
8	4	3	3	3	1	3	2	2	3	2	3	3	1	3	3	2	3	3	1	1	3	3	1	3	2	3	1	3	2	3	2	3	
13	3	4	3	3	2	3	3	2	3	2	3	3	3	3	2	2	3	2	3	3	3	2	3	1	3	3	3	3	2	2	3	3	
18	2	2	3	1	3	1	3	3	1	2	4	3	2	3	3	3	3	3	3	3	1	3	3	3	2	3	3	1	3	3	3	3	
23	2	3	3	3	3	4	4	4	4	2	3	4	2	3	3	4	2	1	1	1	3	3	2	1	1	3	3	3	2	2	4	4	
28	1	3	2	3	2	4	2	3	2	2	3	3	3	3	2	2	4	4	4	3	3	3	2	1	1	2	3	3	2	4	3	3	
33	2	1	3	3	1	3	3	2	3	4	1	3	1	2	2	2	3	3	2	3	3	2	3	3	1	2	2	3	2	4	1	4	
38	1	3	1	1	2	3	3	3	3	2	3	3	3	3	4	2	3	3	4	3	2	2	3	1	2	2	1	1	1	3	3	3	
45	2	2	3	3	1	3	3	2	1	4	3	3	2	3	3	3	3	2	2	3	2	3	2	3	2	2	2	3	3	4	3	3	
48	3	3	3	3	3	3	2	2	3	2	3	3	3	3	2	2	2	3	3	3	3	3	3	3	2	1	1	3	2	2	3	3	
sub-total	23	26	27	26	21	30	28	26	25	24	29	31	23	28	25	26	30	27	26	26	26	28	25	22	19	24	21	26	22	30	27	32	829
ATTITUDES TOWARDS CHALLENGING WORK																																	
Item 4	4	3	3	3	3	3	3	4	4	3	3	4	2	4	2	3	3	2	3	2	4	2	3	3	4	3	3	4	3	3	2	4	
9	4	3	3	3	3	3	3	1	3	1	3	3	2	4	2	3	3	1	3	4	3	2	3	3	3	3	3	3	3	3	3	2	
14	4	3	4	2	3	3	1	2	1	1	3	3	3	2	2	4	3	2	1	3	3	2	2	3	3	3	1	4	2	3	3	1	
19	4	3	3	3	3	3	3	2	1	4	3	1	4	3	3	3	3	1	3	3	4	3	3	3	3	3	3	4	3	4	4	3	
24	3	1	3	4	2	1	3	3	3	3	2	3	1	3	2	2	3	3	3	3	3	1	3	3	3	3	3	3	3	3	2	2	
29	3	3	3	3	1	2	3	2	3	4	3	3	1	1	2	1	3	1	2	2	3	3	3	2	3	4	2	3	3	4	4	3	
34	4	2	4	3	3	1	3	4	1	3	4	2	3	1	3	4	3	3	3	3	4	1	3	3	3	2	2	4	2	4	3	4	
39	4	3	3	2	3	3	2	3	1	1	2	3	1	3	3	3	3	1	3	3	3	3	4	3	2	4	3	4	3	4	4	2	
44	3	3	4	4	3	3	1	3	3	4	3	3	3	1	2	3	3	1	1	4	4	3	2	3	4	4	3	4	3	4	4	3	
49	3	3	3	4	2	2	3	3	3	4	3	3	3	3	2	3	2	4	3	3	3	3	3	2	4	4	3	3	3	4	3	2	
sub-total	37	27	33	31	26	24	25	27	26	28	29	30	23	25	23	28	29	19	25	30	34	25	29	28	32	33	26	39	28	37	32	27	914

Mean = 25.9
S. D. = 3.07
S.E. = 0.54

Mean = 28.6
S.D. = 4.51
S.E. = 0.8

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 32) (First Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
SENSE OF PROFESSIONAL RESPONSIBILITY																																	
Item 5	3	3	1	2	4	2	3	4	2	3	4	3	3	1	2	3	2	3	4	3	3	3	3	3	4	2	1	2	3	1	3	4	
10	3	3	3	3	2	3	3	3	1	1	3	3	2	3	3	3	2	2	4	3	3	3	2	1	4	3	2	1	3	1	3	3	
15	1	1	3	2	1	3	3	1	3	3	3	3	2	2	3	2	3	2	3	2	3	2	3	3	2	3	1	3	3	3	3	3	
20	2	2	2	2	3	1	2	1	3	2	2	3	3	2	2	3	2	3	3	3	3	2	3	2	2	1	2	3	4	1	2	2	
25	4	2	3	2	4	3	3	3	2	1	2	2	2	2	1	3	3	1	3	3	3	3	2	2	4	1	1	2	2	1	1	2	
30	3	3	3	3	3	2	3	2	2	2	2	3	2	2	3	3	2	3	3	3	1	1	2	3	3	3	3	1	1	3	2	4	
35	3	3	1	2	2	1	3	4	3	2	4	3	3	3	3	3	3	3	4	3	2	2	3	3	2	3	1	3	1	1	3	4	
40	3	4	1	1	2	1	2	2	2	3	4	2	4	3	4	4	2	1	2	3	2	3	2	3	3	1	3	3	1	2	3	3	
45	1	3	3	4	3	2	3	2	3	2	4	2	2	3	3	3	2	3	1	3	3	3	2	3	1	1	3	2	3	1	4	2	
45	1	2	3	3	3	2	2	2	4	3	3	3	3	3	3	3	2	3	4	3	3	4	3	1	2	4	1	2	3	1	2	4	
sub-total	24	26	23	24	28	21	27	24	26	22	31	28	26	24	27	30	23	24	31	29	26	26	26	24	27	25	18	24	24	15	26	31	816

Mean = 25.5
S.D. = 4.15
S.E. = 0.73

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 26) (Second Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total	
PERCEPTION OF PERSONAL ACHIEVEMENT																												
Item 1	3	3	2	3	3	3	2	3	4	4	4	4	3	4	3	4	4	4	3	4	3	4	3	4	3	4		
6	2	2	2	2	2	2	2	3	2	1	2	2	3	2	2	3	2	3	4	2	2	4	2	2	2	2		
11	4	3	4	4	4	3	4	2	4	3	3	4	3	3	2	4	4	4	3	3	3	4	2	5	2	2		
16	4	4	3	4	2	4	5	2	2	4	4	3	3	2	2	2	3	2	3	4	3	4	3	4	2	4		
21	2	2	2	2	4	1	2	3	1	1	1	3	2	2	2	2	2	2	2	1	2	2	2	1	2	2		
26	5	3	4	4	4	5	5	3	4	5	5	2	4	4	3	2	4	4	3	3	4	4	4	2	3	3		
31	2	4	4	4	4	4	4	3	4	4	4	2	3	4	4	2	4	4	2	2	3	2	3	4	3	3		
36	4	3	4	5	4	5	4	3	4	5	5	4	4	3	3	3	2	2	3	3	4	3	3	3	4	4		
41	4	3	3	4	4	4	4	4	4	4	5	4	3	4	3	4	5	3	3	4	4	4	4	3	3	4		
46	4	4	4	4	4	5	4	3	4	5	4	4	3	4	3	4	4	4	3	4	3	4	3	4	4	4		Mean = 32.3
sub-total	34	31	32	46	35	36	36	29	33	38	37	32	31	32	27	32	34	32	29	30	30	35	29	32	27	32	840	S.D. = 2.97 S.E. = 0.58
SENSE OF PROFESSIONAL RECOGNITION																												
Item 2	2	4	3	4	4	4	4	3	4	5	4	3	4	4	3	4	3	4	4	3	3	3	4	3	3	2		
7	3	3	3	2	3	3	4	3	3	4	3	3	2	4	3	4	3	4	3	2	2	2	2	4	3	2		
12	2	3	3	4	2	3	2	2	4	3	5	2	2	4	2	2	3	2	2	4	4	4	2	4	3	2		
17	3	2	2	2	2	2	1	3	2	1	1	2	2	2	2	3	2	2	3	1	1	3	2	1	2	1		
22	4	2	4	4	5	3	4	4	4	4	5	4	4	2	3	2	4	5	3	4	2	3	4	4	3	4		
27	2	4	2	4	4	5	4	2	3	4	5	2	3	3	3	4	2	5	2	2	2	3	3	4	3	2		
32	1	4	2	4	2	4	4	4	3	4	5	3	4	3	4	2	4	2	4	4	3	2	2	1	3	3		
37	4	2	2	4	2	2	2	3	2	1	2	2	2	3	2	2	2	3	2	4	2	2	4	5	3	2		
42	2	3	3	4	4	4	3	3	2	4	5	3	3	2	4	3	4	3	4	4	3	3	3	4	2	3		
47	2	4	3	4	4	4	4	2	4	5	4	3	4	3	3	4	3	4	4	4	4	3	4	5	3	4		Mean = 30.3
sub-total	25	31	28	36	30	34	32	26	30	35	39	28	30	30	26	30	30	34	31	32	25	28	30	35	28	25	787	S.D. = 3.63 S.E. = 0.71

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 26) (Second Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total	
PERCEPTION OF PERSONAL GROWTH																												
Item 3	4	2	2	4	3	2	3	3	3	5	5	4	3	3	4	3	4	5	3	4	4	3	4	4	4	4		
8	2	3	4	4	4	4	4	4	4	4	3	4	4	4	3	3	3	5	5	4	2	3	3	3	4	4		
13	4	3	2	4	4	2	4	4	2	3	5	3	3	4	3	3	4	4	3	3	4	3	3	4	4	3		
18	4	3	4	2	4	3	2	4	4	5	5	4	2	3	3	2	4	4	3	2	3	2	4	5	4	4		
23	2	3	4	4	2	4	4	2	3	4	4	3	2	4	3	3	2	2	3	3	4	3	3	2	3	3		
28	4	2	3	2	2	2	2	3	2	1	2	2	3	3	3	4	3	4	3	3	3	4	2	4	5	4		
33	3	3	3	3	4	4	3	3	3	4	3	4	3	2	3	4	2	4	3	3	4	4	3	5	4	4		
38	4	2	4	5	4	4	5	3	4	5	5	4	4	4	3	3	3	5	2	5	4	3	4	5	4	4		
43	2	2	3	2	2	2	2	2	2	1	1	4	2	1	2	2	2	1	2	2	2	2	1	2	1	2		
48	4	4	4	4	4	4	4	3	4	5	4	3	3	2	2	3	4	3	2	2	4	2	3	2	4	2		Mean = 31
sub-total	33	27	30	34	33	31	33	31	31	37	34	36	31	30	29	30	31	37	29	30	35	29	29	34	36	35	805	S.D. = 3.03 S.E. = 0.59
ATTITUDES TOWARDS CHALLENGING WORK																												
Item 4	4	4	2	4	3	3	5	2	3	5	5	3	3	4	2	3	2	4	3	3	2	4	4	4	4	3		
9	2	2	4	4	4	3	4	2	4	3	2	3	2	3	3	3	4	2	4	3	4	3	2	2	5	3		
14	2	2	2	2	2	2	3	3	2	1	2	3	2	3	2	1	4	2	4	2	4	2	3	5	3	2		
19	3	4	3	4	4	4	4	3	4	2	5	3	4	3	2	3	4	3	3	4	4	3	4	4	4	3		
24	4	3	4	4	4	4	4	3	4	4	5	2	4	2	3	3	3	3	2	3	3	3	4	3	3	4		
34	2	4	4	3	5	2	4	3	2	5	4	4	4	4	4	3	5	3	4	3	5	2	4	4	5	3		
39	4	4	4	2	2	4	2	2	4	1	4	3	3	4	3	3	3	4	4	3	3	3	3	5	5	3		
44	2	3	3	3	5	4	1	2	2	1	5	3	3	3	1	2	3	2	3	2	1	2	2	2	1	2		
49	2	4	4	3	2	5	5	3	4	5	5	3	3	2	2	2	3	2	3	2	2	2	2	3	2	2		Mean = 30.2
sub-total	29	28	32	34	45	36	36	27	35	32	41	29	32	32	26	27	34	27	30	27	31	27	31	35	36	28	785	S.D. = 4.04 S.E. = 0.79

Job Satisfaction Profile
Total Scores Obtained by the Control Group (N = 26) (Second Post-test)

Subjects

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total
SENSE OF PROFESSIONAL RESPONSIBILITY																											
Item 5	2	3	4	4	4	4	4	4	4	5	3	3	4	3	4	3	2	3	5	5	3	3	5	3	5	3	
10	4	3	4	4	2	3	1	3	4	4	4	3	2	3	4	2	3	3	2	4	2	2	4	2	2	2	
15	3	2	3	4	4	3	2	4	4	2	2	3	2	3	3	3	4	2	3	2	2	3	3	2	3	2	
20	3	4	3	2	4	4	5	4	2	1	5	2	4	3	4	3	4	2	5	3	3	3	2	3	5	2	
25	3	3	4	3	4	3	5	2	3	5	5	3	3	4	4	2	4	3	5	3	4	3	3	4	5	3	
30	4	4	3	3	4	2	4	3	4	4	5	2	3	3	3	3	3	3	3	4	2	4	4	3	3	4	
35	4	3	2	3	4	4	4	3	4	4	5	4	3	4	4	3	4	4	5	5	3	2	4	2	5	1	
40	4	4	2	3	2	5	4	3	4	3	5	3	4	4	2	3	4	4	5	5	3	4	4	2	5	4	
45	2	2	2	2	1	2	1	2	2	1	2	3	2	2	2	2	3	2	3	2	2	3	1	3	1	4	
50	2	2	3	2	2	1	2	2	2	2	2	3	2	3	3	2	3	1	2	3	2	1	1	3	2	2	
sub-total	31	30	30	30	31	30	36	30	33	31	38	29	29	32	33	24	33	28	38	36	26	28	31	26	36	28	797

Mean = 30.7
S.D. = 3.62
S.E. = 0.71

APPENDIX E

ANALYSIS OF COVARIANCE

APPENDIX E

Raw Data for Hypothesis 5.1
Analysis of Covariance for Experimental and Control Groups measured on Continuing Nursing Education Awareness Index (Policy Issues) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	18	35	324	1225	630	22	29	484	841	638
	21	33	441	1089	693	27	26	729	676	702
	16	35	256	1225	560	25	26	625	676	650
	23	33	529	1089	759	22	21	484	441	462
	21	37	441	1369	567	21	25	441	625	525
	20	25	400	1225	700	18	29	324	841	324
	19	32	361	1024	608	21	23	441	529	483
	23	30	529	900	690	23	25	529	625	575
	20	21	400	441	420	24	28	576	784	672
	32	33	1024	1089	1056	22	29	484	841	638
	30	30	900	900	900	25	26	625	696	650
	28	30	784	900	840	25	28	625	784	700
	26	30	676	900	780	22	22	484	487	484
	23	34	529	1156	782	25	27	625	729	675
	27	32	729	1024	864	24	23	576	529	552
	23	32	529	1024	736	28	29	784	841	812
	21	33	441	1089	693	27	27	729	729	729
	22	32	484	1024	704	25	25	625	625	625
	29	27	841	729	783	19	27	361	729	513
	25	26	625	676	650	30	32	900	1044	960
	28	29	576	841	812	28	29	784	841	812
	25	24	625	576	500	34	25	1156	625	850
	29	31	841	961	899	33	30	1089	900	990
	29	28	841	784	812	35	25	1225	625	875
	27	28	729	784	756	24	25	576	625	600
	24	27	576	729	648	22	23	484	529	506
	23	31	529	961	713	25	22	625	494	550
	26	28	676	784	728	28	23	784	529	644
	30	35	900	1225	1050	25	18	625	324	450
	27	31	729	691	837	28	29	784	841	812
	22	33	484	1089	726	22	19	484	361	418
	29	31	841	961	899	34	29	1156	841	986
	37	29	1296	841	1073					
	30	28	900	784	840					
	25	24	625	576	600					
	25	32	625	1024	800					
	23	29	529	841	667					
Sums	893	1130	23565	34820	27875	773	823	21223	21607	20862
Means	24.1	30.5				24.2	25.7			
N	37					32				

Raw Data for Hypothesis 5.2
Analysis of Covariance for Experimental and Control Groups measured on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	22	33	484	1089	726	25	25	625	625	625
	24	32	576	1024	768	27	29	729	841	783
	19	34	361	1156	646	28	26	784	626	728
	24	33	576	1089	792	27	22	729	484	594
	19	29	361	841	551	24	32	576	1024	768
	22	24	484	576	528	25	28	625	784	700
	20	30	400	900	600	26	30	676	900	780
	21	33	441	1089	693	25	26	625	676	650
	21	30	441	900	630	23	22	529	484	506
	29	29	841	841	841	24	26	576	676	624
	28	32	784	1024	896	24	21	576	441	504
	28	31	784	961	868	25	27	625	729	675
	30	25	900	625	750	25	22	625	484	550
	34	30	1156	900	1020	27	26	729	676	702
	33	29	1089	841	957	25	21	625	441	525
	24	30	576	900	720	31	24	960	576	744
	26	31	676	961	806	27	24	729	576	648
	23	27	529	1369	621	26	33	676	1089	858
	31	29	961	841	899	21	25	441	625	525
	28	30	784	900	840	30	23	900	529	690
	30	29	900	841	870	26	26	676	676	676
	25	27	625	729	775	25	28	625	784	700
	28	32	784	1024	896	23	29	529	841	667
	30	30	900	900	900	25	25	625	625	625
	26	27	676	729	702	24	28	576	784	672
	26	27	676	729	702	24	26	576	676	624
	27	28	729	784	756	27	25	729	625	675
	28	29	784	841	812	27	26	729	676	702
	28	32	784	1004	896	26	30	676	900	780
	26	32	676	1004	832	26	26	576	676	676
	21	32	441	1004	672	24	28	676	784	672
	22	30	484	900	660	26	21	676	441	546
	26	26	676	676	676					
	28	33	784	1089	924					
	29	29	841	841	841					
	24	26	576	676	624					
	27	27	729	729	729					
Sums	925	1107	25269	33327	28419	818	820	21033	21824	21194
Means	25.7	29.9				26	25.6			
N	37					32				

Raw Data for Hypothesis 5.3
Analysis of Covariance for Experimental and Control Groups measured on Continuing Nursing Education Awareness Index (Implementation Process) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	19	29	361	841	551	25	26	625	676	650
	21	33	441	1089	693	24	22	576	484	528
	19	29	361	841	551	30	30	900	900	900
	23	31	529	961	713	28	25	784	625	700
	22	26	484	1296	572	25	24	625	576	600
	24	31	576	961	744	25	26	625	686	650
	20	27	400	729	540	19	19	361	361	361
	21	28	441	784	588	21	22	441	484	462
	21	28	441	784	588	21	25	441	625	525
	26	26	676	676	676	23	28	529	784	644
	26	27	676	729	702	21	19	441	361	399
	29	28	841	784	812	24	24	576	576	576
	30	28	900	784	840	22	25	484	625	550
	34	27	1156	729	928	23	21	529	444	483
	29	28	841	784	852	26	25	676	625	650
	22	29	484	841	638	29	29	841	841	841
	28	29	784	841	812	24	22	576	484	528
	23	28	529	784	644	26	27	676	729	702
	27	30	729	900	810	25	25	625	625	625
	25	30	625	900	950	27	28	729	984	756
	27	27	729	1369	929	25	21	625	441	525
	22	25	484	625	550	24	25	576	825	600
	28	26	784	676	728	24	26	576	876	624
	25	27	625	729	675	26	27	676	729	702
	25	25	625	625	625	18	19	324	361	342
	22	26	484	676	572	20	21	400	441	420
	24	24	576	576	576	26	22	676	484	572
	23	29	529	841	667	26	23	676	629	598
	25	29	625	841	725	25	28	625	984	700
	26	30	676	900	780	23	23	529	629	529
	24	29	576	841	696	21	26	441	676	546
	23	28	529	784	644	22	23	484	629	506
	27	30	729	900	810					
	27	27	729	729	729					
	24	29	576	841	696					
	22	29	484	841	638					
	27	28	729	784	756					
Sums	906	1040	22764	30616	25999	768	775	18668	20195	18794
Means	24.5	28.1				24.2	25.8			
N	37					32				

Raw Data for Hypothesis 5.4
Analysis of Covariance for Experimental and Control Groups measured on Continuing Nursing Education Awareness Index (Learning Climate) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	18	27	324	729	486	20	22	400	484	440
	16	30	256	900	480	26	28	676	784	728
	18	27	324	729	486	25	27	625	729	675
	16	27	256	729	432	26	23	676	529	598
	22	28	484	780	616	21	27	441	819	567
	21	30	441	900	630	24	30	576	900	720
	25	32	625	1024	750	22	24	484	576	528
	24	30	576	900	720	22	22	484	484	484
	27	24	729	576	729	24	18	576	324	432
	25	29	625	841	725	24	17	576	289	408
	28	29	780	841	812	25	27	625	729	675
	29	29	841	841	841	26	16	676	256	416
	23	23	529	529	529	24	27	576	729	648
	30	26	900	676	780	23	22	529	484	506
	24	30	576	900	720	30	30	900	900	900
	27	27	729	729	729	29	23	841	829	667
	25	30	625	900	570	27	28	729	784	756
	29	26	841	676	754	24	24	576	876	876
	25	29	625	841	725	28	27	784	289	756
	26	23	676	529	598	24	21	576	441	504
	21	24	441	576	504	25	32	625	1024	800
	32	26	1024	676	832	26	30	676	900	780
	28	24	780	576	672	24	24	576	576	576
	28	26	780	676	728	22	18	484	624	696
	22	27	484	729	594	21	17	441	489	357
	23	27	529	729	621	24	25	576	625	600
	29	29	841	841	841	26	23	676	829	598
	28	25	780	625	700	26	28	784	784	728
	29	29	841	841	841	26	25	625	925	850
	21	25	441	625	525	23	25	625	625	575
	22	28	484	784	616	23	18	324	324	414
	30	29	900	841	870					
	27	24	729	576	648					
	30	29	900	844	870					
	22	24	484	576	528					
	29	27	841	729	783					
Sums	912	999	23717	27715	25245	785	806	19363	20537	19858
Means	24.7	27				24.7	25.2			
N	37					32				

Raw Data for Hypothesis 5.5
Analysis of Covariance for Experimental and Control Groups measured on Continuing Nursing Education Awareness Index (Individual Responsibility) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	16	22	256	484	352	19	17	361	289	323
	17	25	298	625	425	23	22	529	484	506
	29	29	841	841	891	27	28	729	784	756
	28	27	784	729	826	28	27	784	729	756
	20	21	400	441	420	25	23	625	529	575
	22	20	484	400	440	23	24	529	576	552
	18	25	324	625	450	24	27	576	729	648
	22	34	484	1156	784	20	17	400	289	340
	19	27	361	729	513	22	22	484	484	484
	23	29	529	841	661	28	27	784	729	756
	25	32	625	1014	800	24	23	576	529	552
	21	28	441	784	588	25	23	625	529	575
	28	27	784	729	756	22	24	884	576	528
	22	29	484	841	638	21	16	441	368	336
	30	31	900	961	930	22	22	484	484	484
	23	27	529	729	621	24	21	576	441	504
	23	29	529	841	667	29	30	841	900	870
	23	28	529	784	644	23	24	529	576	552
	27	29	729	841	783	24	28	576	784	672
	30	32	900	1024	960	27	30	729	900	810
	24	32	576	1024	768	23	25	529	625	414
	23	32	529	1024	736	24	24	576	576	576
	25	26	625	676	650	26	27	676	729	702
	27	31	729	961	837	24	18	576	424	432
	28	31	784	961	868	26	30	676	900	780
	24	32	576	1024	768	21	18	441	424	378
	26	31	676	961	806	27	25	729	625	675
	26	29	676	841	754	26	23	676	529	598
	27	25	729	625	675	25	25	625	625	625
	26	25	676	625	650	27	32	729	1024	864
	23	23	529	529	529	22	25	484	625	550
	23	24	529	576	552	25	28	625	784	700
	26	24	676	576	624					
	27	28	729	784	756					
	32	31	1024	961	992					
	25	22	625	484	550					
	27	22	729	484	594					
Sums	904	1006	28506	28529	25222	786	781	19404	19599	18873
Means	24.4	27.2				24	24.4			
N	37					32				

Raw Data for Hypothesis 6.1
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Perceptions of Personal Achievement) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	31	35	961	1225	1085	36	32	1296	1024	1152
	32	34	1024	1156	1088	30	33	900	1089	990
	29	35	841	1225	1015	27	26	729	676	702
	35	32	1225	1024	1120	31	31	961	961	961
	23	34	529	1156	782	31	31	961	961	961
	27	33	729	1089	891	34	33	1156	1089	1122
	27	32	729	1024	864	25	29	625	841	725
	30	34	900	1156	1020	27	32	729	1024	864
	28	33	784	1089	924	35	25	1225	625	875
	31	31	961	961	961	29	26	841	676	754
	33	29	1089	841	957	27	27	729	729	729
	31	29	961	841	899	27	27	729	729	729
	33	33	1089	1089	1089	31	25	961	625	775
	28	30	784	900	840	31	34	961	576	1054
	16	30	256	900	480	26	28	676	784	728
	28	31	784	961	868	27	31	729	961	837
	32	29	1024	841	928	27	29	729	841	783
	34	29	1156	841	986	27	35	729	1225	945
	31	32	961	1024	992	26	27	676	729	702
	27	29	729	841	783	27	28	729	784	756
	31	31	961	961	961	22	31	484	961	682
	31	32	961	1024	992	25	28	625	784	700
	33	31	1089	961	1023	26	32	676	1024	832
	29	35	841	1225	1015	23	28	529	784	644
	32	26	1024	676	832	25	20	625	400	500
	29	29	841	841	841	27	28	729	784	765
	26	31	676	961	806	25	33	625	1089	825
	26	32	676	1024	832	29	33	841	1089	957
	25	33	625	1089	825	28	28	784	784	784
	29	35	841	1225	725	28	27	784	729	756
	26	33	676	1089	858	26	27	676	729	702
	25	34	625	1156	850	28	26	784	676	728
	27	35	729	1225	945					
	27	36	729	1296	972					
	27	25	729	625	675					
	32	32	1024	1024	1024					
	26	34	676	1156	884					
Sums	1061	1160	31239	37742	33632	890	893	25233	26782	26010
Means	28.7	31.4				28	27.9			
N	37					32				

Raw Data for Hypothesis 6.2
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Sense of Professional Recognition) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	30	35	900	1225	1050	27	22	729	484	594
	32	35	1024	1225	1120	28	19	784	361	532
	27	32	729	1024	864	26	24	676	576	824
	31	34	961	1156	1054	25	24	625	576	600
	14	38	196	1444	532	28	24	784	576	872
	22	34	484	1156	748	30	24	900	576	720
	29	30	841	900	870	23	31	529	961	713
	30	36	900	1256	1080	23	30	529	900	690
	23	33	529	1089	759	30	27	900	729	810
	29	31	841	961	899	31	22	961	484	882
	28	34	784	1156	952	30	25	900	625	750
	29	26	841	676	754	28	26	784	676	728
	32	32	1024	1024	1024	26	31	676	961	806
	32	25	1024	625	800	24	26	576	676	624
	14	31	196	961	434	30	28	900	784	840
	26	31	676	961	806	25	31	625	961	775
	33	30	1086	900	990	15	26	225	676	390
	35	30	1225	900	1050	23	32	529	1024	736
	30	32	900	1024	960	28	26	784	676	728
	38	29	1444	841	1102	21	29	441	841	809
	32	31	1024	961	992	25	31	625	961	775
	33	32	1089	1024	1056	26	26	676	676	676
	34	29	1156	841	1015	23	22	529	484	506
	28	33	784	1089	924	24	25	576	625	600
	33	26	1089	676	858	27	26	729	676	702
	30	25	900	625	750	21	26	441	676	546
	26	34	676	1156	884	26	27	676	729	702
	31	30	961	900	930	23	30	529	900	890
	22	28	484	884	616	23	31	529	961	713
	28	34	784	1156	952	25	24	625	576	600
	22	32	484	1024	704	26	28	676	784	728
	25	31	625	961	775	25	26	625	676	650
	27	33	729	1089	891					
	27	32	729	1024	864					
	27	27	729	829	729					
	28	29	784	841	812					
	26	33	676	1089	858					
Sums	1033	1157	30308	36673	32458	825	861	21093	22847	22511
Means	27.9	31.3				25.8	26.9			
N	37					32				

Raw Data for Hypothesis 6.3
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Perceptions of Personal Growth) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	29	35	841	1225	1015	31	23	961	529	713
	29	33	841	1089	957	24	26	576	676	624
	27	31	729	961	837	29	27	841	729	783
	32	42	1024	1764	1344	26	26	676	676	676
	20	47	400	2209	940	28	21	784	441	588
	24	38	576	1444	672	32	30	1024	900	960
	28	37	784	1369	1036	25	28	625	784	700
	28	38	784	1444	1064	26	26	676	676	676
	25	33	625	1089	825	32	25	1024	625	800
	25	31	625	961	775	31	24	961	576	744
	29	30	841	900	870	28	29	784	841	812
	28	29	784	841	812	26	31	676	961	806
	24	31	676	961	744	30	23	900	529	690
	29	35	841	1225	1015	26	28	676	784	728
	13	32	169	1024	416	24	25	576	625	600
	25	32	625	1024	800	24	26	576	676	624
	28	31	784	961	868	27	30	729	900	810
	35	34	1225	1156	1190	22	27	484	729	894
	31	34	961	1156	1054	27	26	729	676	702
	29	34	841	1156	986	19	26	361	676	894
	32	39	1024	1521	1248	25	26	625	676	650
	31	33	961	1089	1023	24	28	576	784	672
	35	32	1225	1024	1120	16	25	256	625	400
	28	35	784	1225	980	24	22	576	484	528
	31	26	961	676	806	26	19	676	361	494
	25	29	625	841	725	24	24	576	576	576
	22	33	484	1089	726	26	21	676	441	546
	23	32	529	1024	736	25	26	625	676	650
	25	31	625	961	775	23	22	625	484	506
	27	29	729	841	783	24	30	576	900	720
	25	33	625	1089	825	21	27	441	729	567
	26	38	676	1444	988	24	32	576	1024	768
	26	31	676	961	806					
	24	33	576	1089	792					
	31	24	961	576	744					
	28	35	784	1225	980					
	30	30	900	900	900					
Sums	1017	1220	28121	41534	33177	830	829	21443	20769	21901
Means	27.5	33				26.1	25.9			
N	37					32				

Raw Data for Hypothesis 6.4
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Attitudes Towards Challenging Work) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	32	37	1024	1369	1184	32	37	1024	1369	1184
	31	36	961	1296	1116	26	27	676	729	702
	31	38	961	1444	1184	32	33	1024	1089	1056
	27	36	729	1296	972	28	31	784	961	868
	14	37	194	1369	518	28	26	784	676	728
	23	39	529	1521	897	35	24	1225	576	840
	25	35	625	1225	875	27	25	729	625	675
	28	37	784	1369	1036	27	27	729	729	729
	24	36	576	1296	864	26	26	676	676	676
	30	37	900	1369	1110	30	28	900	784	840
	28	33	784	1089	924	26	29	626	841	754
	30	30	900	990	900	29	30	841	700	870
	30	32	900	1024	960	32	23	1024	529	736
	29	31	841	961	899	23	25	529	625	575
	17	32	289	1024	544	27	23	729	529	621
	17	33	289	1089	561	31	28	961	784	868
	33	27	1089	729	891	23	29	529	841	667
	37	29	1369	841	1073	26	19	676	361	494
	33	31	1089	961	1023	24	25	576	625	600
	28	31	784	961	868	21	30	441	900	630
	32	39	1024	1521	1248	24	34	576	1156	816
	32	35	1024	1225	1120	27	25	729	625	675
	37	35	1369	1225	1295	20	29	400	841	580
	32	33	1024	1089	1056	28	28	784	784	784
	34	25	1156	625	850	23	32	529	1024	736
	29	33	841	1089	957	28	33	784	1089	924
	27	34	729	1156	918	28	26	784	676	728
	23	28	529	784	644	26	39	676	1521	1014
	28	25	784	625	700	27	28	729	784	756
	30	30	900	900	900	25	37	625	1369	925
	27	29	729	841	783	29	32	841	1024	928
	27	29	729	841	783	28	27	784	729	756
	27	30	729	900	810					
	23	29	529	841	667					
	25	23	625	529	575					
	30	28	900	784	840					
	28	33	784	1089	924					
Sums	1068	1195	30022	39290	34463	856	914	23774	26771	24735
Means	28.9	32.3				26.8	28.6			
N	37					32				

Raw Data for Hypothesis 6.5
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Sense of Professional Responsibility) at First Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	29	35	841	1225	1015	31	24	961	576	744
	30	37	900	1369	1110	28	26	784	676	728
	28	35	784	1225	980	26	23	676	529	598
	34	31	1156	961	1054	24	24	576	576	576
	23	32	529	1024	736	27	28	729	784	756
	23	38	529	1444	874	30	21	900	441	630
	25	37	625	1369	925	23	27	529	729	621
	28	36	784	1296	1008	24	24	576	576	576
	23	40	529	1600	920	31	26	961	676	806
	26	31	676	961	806	29	22	841	484	638
	28	31	784	961	868	26	31	676	961	806
	29	34	841	1156	986	26	38	676	1444	988
	30	34	900	1156	1020	26	26	676	676	676
	30	27	900	729	810	24	24	576	576	576
	17	31	289	961	527	27	27	729	729	729
	24	30	576	900	720	25	30	625	900	750
	25	30	625	900	750	18	23	324	629	414
	37	30	1369	900	1110	24	24	576	576	576
	31	32	961	1024	992	24	31	576	961	744
	27	33	729	1089	891	15	29	225	841	435
	28	30	784	900	840	26	26	676	676	676
	33	30	1089	900	990	25	26	625	676	650
	32	29	1024	841	928	19	26	361	676	494
	31	29	961	841	899	23	24	529	576	552
	31	32	961	1024	992	17	27	289	729	459
	26	31	676	961	806	24	25	576	625	600
	27	37	729	1369	999	28	18	784	324	504
	24	28	576	784	672	22	24	484	576	528
	24	33	576	1089	792	21	24	441	576	504
	25	28	625	784	700	25	35	625	1225	375
	21	31	441	961	651	27	26	729	676	702
	27	33	729	1089	891	20	31	400	961	620
	28	28	784	784	784					
	26	30	676	900	780					
	28	32	784	1024	896					
	28	36	784	1296	1008					
	21	33	441	1089	693					
Sums	993	1194	27967	37177	32423	785	816	19711	22636	20031
Means	26.8	32.3				24.6	25.5			
N	37					32				

Raw Data for Hypothesis 7.1
Analysis of Covariance for Experimental and Control Groups measured in Continuing Nursing Education Awareness Index (Policy Issues) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	35	30	1225	900	1050	29	33	841	1089	667
	33	32	1089	1024	1056	26	30	676	900	780
	35	32	1225	1024	1120	26	28	676	784	728
	33	33	1089	1089	1089	21	31	441	961	651
	37	36	1369	1296	1332	25	36	625	1296	900
	35	37	1225	1396	1295	29	29	841	841	841
	32	29	1024	841	928	23	29	529	841	687
	30	32	900	1024	960	25	26	625	676	650
	21	31	441	961	651	28	24	784	576	672
	33	33	1089	1089	1089	29	33	841	1089	667
	30	32	900	1024	960	26	35	676	1225	910
	30	30	900	900	900	28	28	784	784	784
	30	32	900	1024	960	22	27	487	729	594
	34	36	1156	1296	1224	27	25	729	625	675
	32	32	1024	1024	1024	23	27	529	729	621
	32	31	1024	961	992	29	29	841	841	841
	33	31	1089	961	1023	27	25	729	625	675
	32	33	1024	1089	1056	25	26	625	676	650
	27	32	729	1024	864	27	24	729	576	648
	26	28	676	784	728	32	25	1024	625	800
	37	38	1369	1444	1406	29	30	841	900	870
	24	33	576	1089	792	25	27	625	729	675
	31	35	961	1225	1085	30	27	900	729	810
	28	28	784	784	784	25	29	625	841	725
	28	31	784	961	868	25	27	625	729	675
	27	31	729	961	837	23	25	529	625	575
	31	24	961	576	744					
	28	32	784	1024	992					
	35	30	1225	900	930					
	31	31	961	961	961					
Sums	910	962	29232	30629	29700	673	735	18177	21041	18751
Means	30.5	32.1				25.7	28.3			
N	30					26				

Raw Data for Hypothesis 7.2
Analysis of Covariance for Experimental and Control Groups measured in Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	33	28	1089	784	924	25	31	625	961	525
	32	31	1024	961	992	29	30	841	900	870
	34	30	1156	900	1020	26	27	676	729	702
	33	33	1089	1089	1089	22	31	484	961	682
	29	31	841	961	899	32	34	1024	1156	1088
	24	28	576	784	672	28	28	784	784	784
	30	33	900	1089	990	30	34	900	1156	1020
	33	37	1089	1369	1221	26	26	676	676	676
	30	28	900	784	840	22	27	484	729	594
	29	28	841	784	812	26	34	676	1156	884
	32	30	1024	900	960	21	26	441	676	546
	31	34	961	1156	1054	27	35	729	1225	945
	25	32	625	1024	800	22	26	484	676	572
	30	33	900	1089	990	26	27	676	729	702
	29	28	841	784	812	21	26	441	676	546
	30	32	900	1024	960	24	28	576	784	672
	31	34	961	1156	1054	24	27	576	729	648
	37	33	1369	1089	1221	33	30	1089	900	990
	29	27	841	729	783	25	28	625	784	700
	30	31	900	961	930	23	27	529	729	621
	29	34	841	1156	986	26	30	676	900	780
	27	27	729	729	729	28	29	784	841	812
	32	35	1024	1225	1120	29	32	841	1024	928
	30	30	900	900	900	27	26	729	676	702
	25	27	625	729	675	28	33	784	1089	924
	27	28	729	784	756	26	27	676	729	702
	28	26	784	676	728					
	29	26	841	676	754					
	32	32	1024	1024	1024					
	32	35	1024	1225	1120					
Sums	904	920	27452	28488	27842	664	759	17722	22428	19588
Means	29.9	30.7				25.6	29.2			
N	30					26				

Raw Data for Hypothesis 7.3
Analysis of Covariance for Experimental and Control Groups measured in Continuing Nursing Education Awareness Index (Implementation Process) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	29	26	841	676	754	26	29	676	841	754
	33	30	1089	900	990	22	27	484	729	594
	29	28	841	784	812	30	32	900	1024	960
	31	31	961	961	961	25	33	625	1089	825
	36	30	654	900	1080	24	30	567	900	720
	31	31	961	961	961	26	29	676	841	754
	27	30	729	900	810	19	24	361	576	456
	28	31	784	961	868	22	23	484	529	506
	28	24	784	576	672	25	32	625	1024	800
	26	35	676	1225	910	28	27	784	729	756
	27	24	729	1576	648	19	28	361	784	532
	28	30	784	900	840	24	30	576	900	720
	28	29	784	841	812	25	27	625	729	675
	27	30	729	900	810	21	26	441	676	546
	28	31	784	961	868	25	29	625	841	725
	29	28	841	784	812	29	29	841	841	841
	29	31	841	961	899	22	24	484	576	528
	28	26	784	1080	798	27	30	729	900	810
	30	30	900	900	900	25	26	625	676	650
	30	30	900	900	900	28	29	784	841	812
	37	35	569	1225	1295	21	28	441	784	588
	25	25	625	625	625	25	26	625	676	650
	26	30	676	900	780	26	25	676	625	650
	27	25	729	1625	675	27	29	729	841	783
	25	24	625	876	600	19	24	361	576	456
	26	28	676	784	728	21	28	441	784	588
	24	31	576	961	744					
	29	31	741	961	899					
	29	30	741	900	870					
	30	25	900	625	625					
Sums	840	889	23254	29129	24946	630	730	15555	20332	17679
Means	28.1	29.6				25.8	28.1			
N	30					26				

Raw Data for Hypothesis 7.4
Analysis of Covariance for Experimental and Control Groups measured in Continuing Nursing Education Awareness Index (Learning Climate) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	27	29	729	841	783	22	23	484	1089	726
	30	29	900	841	870	28	29	784	841	812
	27	28	729	784	756	27	28	729	784	756
	27	31	729	961	837	23	31	529	961	713
	28	32	780	1024	896	24	31	576	961	744
	30	36	900	1296	1080	27	29	729	841	783
	30	27	900	729	810	30	34	900	1156	1620
	32	35	537	1225	1120	24	23	576	529	552
	30	32	900	1024	860	22	25	484	625	550
	24	34	576	1156	816	18	35	324	1225	630
	29	30	841	900	870	17	32	289	1024	544
	29	28	841	784	812	27	26	729	676	702
	29	31	841	961	899	16	32	256	1024	512
	23	29	529	841	667	27	29	729	841	783
	26	29	676	841	754	22	29	484	841	638
	30	28	900	784	840	30	25	900	625	750
	27	32	729	1024	725	23	28	529	784	644
	30	33	600	1089	890	28	30	784	900	840
	26	34	676	1156	884	24	27	576	729	648
	29	27	841	729	683	27	28	289	784	756
	23	29	529	841	667	21	25	441	625	525
	24	27	576	729	648	32	29	1024	841	928
	26	25	676	625	650	30	32	900	1024	960
	24	25	576	625	600	24	28	576	784	672
	26	26	676	676	676	18	27	324	729	486
	27	33	729	1089	621	17	25	289	625	425
	27	29	729	841	783					
	29	27	742	729	783					
	25	23	625	529	575					
	29	28	841	784	812					
Sums	813	876	21753	26458	23669	623	750	15234	20996	18099
Means	27	29.2				25.2	28.8			
N	30					26				

Raw Data for Hypothesis 7.5
Analysis of Covariance for Experimental and Control Groups measured in Continuing Nursing Education Awareness Index (Individual Responsibility) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	22	31	484	961	682	19	33	361	1089	627
	25	31	625	961	775	23	31	529	961	713
	23	31	529	961	713	27	30	729	900	810
	20	28	400	784	560	28	31	784	961	868
	21	33	441	1089	693	25	35	625	1225	875
	20	35	400	1225	700	23	31	529	961	713
	25	29	625	841	725	24	36	576	1296	864
	34	31	1156	961	744	20	27	400	729	540
	27	33	729	1089	891	22	27	484	729	594
	29	36	841	639	1044	28	34	784	1154	952
	32	31	1024	961	992	24	32	576	1024	768
	28	31	784	961	868	25	33	625	1089	825
	27	31	729	961	837	22	32	484	1024	704
	29	30	841	900	870	21	28	441	784	588
	31	31	961	961	961	22	28	484	784	616
	27	32	729	1024	864	24	30	576	900	720
	29	32	841	1024	928	29	31	841	961	899
	28	30	704	961	840	23	29	529	841	667
	29	33	841	1089	957	24	32	576	1024	768
	32	30	1024	900	1350	27	31	729	961	837
	32	31	1024	761	992	23	29	529	841	667
	32	32	1024	1024	1024	24	31	576	961	744
	26	33	676	1089	858	26	28	676	784	728
	31	30	961	900	930	24	33	576	1089	792
	31	27	961	729	837	26	31	676	961	806
	32	26	1024	676	832	21	27	441	729	567
	31	29	961	841	899					
	29	28	841	784	812					
	25	28	625	784	700					
	25	27	625	729	675					
Sums	832	920	23423	27570	25553	634	789	15136	24762	19252
Means	27.2	30.7				24.4	30.3			
N	30					26				

Raw Data for Hypothesis 8.1
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Perceptions of Personal Achievement) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	35	33	1225	1089	1155	32	34	1024	1156	1088
	34	36	1156	1296	1224	33	31	1089	961	1023
	35	32	1225	1024	1120	26	32	676	1024	832
	32	34	1024	1156	1088	31	36	961	1296	1116
	34	30	1156	900	1020	31	35	961	1225	1085
	33	35	1089	1225	1155	33	36	1089	1296	858
	32	35	1024	1225	1120	29	36	841	1296	1044
	34	36	1156	1296	1224	32	29	1024	841	928
	33	36	1089	1296	1188	25	33	625	1089	825
	31	27	961	729	837	26	38	676	1444	988
	29	34	841	1156	986	27	37	729	1369	999
	29	32	841	1024	928	27	32	729	1024	864
	33	31	1089	961	1023	25	31	625	961	775
	30	32	900	1024	960	24	32	576	1024	768
	30	31	900	961	930	28	27	784	729	756
	31	34	961	1156	1054	31	32	961	1024	992
	29	38	841	1444	1102	29	34	841	1156	986
	29	39	841	1521	1131	35	32	1225	1024	1120
	32	35	1024	1225	1120	27	29	729	841	783
	29	32	841	1024	928	28	30	784	900	840
	31	32	961	1024	992	31	30	961	900	930
	32	28	1024	784	896	28	35	784	1225	840
	31	33	961	1089	1023	32	29	1024	841	928
	35	34	1225	1156	1190	28	32	784	1024	896
	26	33	626	1089	858	20	27	400	729	540
	29	37	841	1369	1073	28	32	784	1024	896
	31	33	961	1089	1023					
	32	29	1024	841	928					
	33	29	1089	841	957					
	35	27	1225	729	945					
Sums	931	990	30171	35743	31178	715	840	21686	27423	23700
Means	31.4	33				27.9	32.3			
N	30					26				

Raw Data for Hypothesis 8.2
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Sense of Professional Recognition) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	35	29	1225	841	1015	22	25	484	625	550
	35	32	1225	1024	1120	19	31	361	961	589
	32	33	1024	0189	1056	24	28	576	784	672
	34	27	1156	729	918	24	36	576	1296	864
	38	27	1444	729	1026	24	30	576	900	720
	34	31	1156	961	1054	24	34	576	1156	816
	30	32	900	1024	960	31	32	961	1024	992
	36	34	1156	1156	1224	30	26	900	676	780
	33	33	1089	1089	1089	27	30	729	900	810
	31	25	961	625	775	22	35	484	1225	770
	34	27	1156	729	918	25	39	625	1521	975
	26	30	676	900	780	26	28	676	784	728
	32	32	1024	1024	1024	31	30	961	900	930
	25	27	1625	729	945	26	30	676	900	780
	31	36	961	1024	1116	28	26	784	676	728
	31	28	961	784	868	31	30	961	900	930
	30	26	900	676	780	26	30	676	900	780
	30	28	900	784	840	32	34	1024	1156	1088
	32	37	1024	1369	1184	26	31	676	961	806
	29	32	841	1024	928	29	32	841	1024	928
	31	33	961	1089	1023	31	25	961	625	775
	32	31	1024	961	992	26	28	676	784	728
	29	29	841	841	841	22	30	484	900	660
	33	29	1089	841	957	25	35	625	1225	875
	26	28	869	784	728	26	28	676	784	728
	25	29	625	841	925	26	25	676	625	650
	34	29	1156	841	986					
	30	30	900	900	900					
	28	33	784	1089	924					
	34	30	1956	900	1020					
Sums	936	912	30809	27397	28916	695	787	18221	24212	20652
Means	31.3	30.4				26.9	30.3			
N	30					26				

Raw Data for Hypothesis 8.3
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Perceptions of Personal Growth) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	35	27	1225	729	945	23	33	529	1089	759
	33	33	1089	1089	1089	26	27	676	729	702
	31	29	961	841	899	27	30	729	900	810
	42	31	1764	961	1302	26	34	676	1156	884
	47	29	2209	841	1363	21	33	441	1089	693
	38	30	1444	900	1140	30	31	900	961	930
	37	26	1396	690	962	28	33	784	1089	924
	38	37	1444	1369	1406	26	31	676	961	806
	33	27	1089	729	891	25	31	625	961	775
	31	23	961	529	713	24	37	576	1369	888
	30	29	900	841	870	29	34	841	1156	986
	29	31	841	961	899	31	36	961	1296	1116
	31	33	961	1089	1023	23	31	529	961	713
	35	31	1225	961	1085	28	30	784	900	840
	32	30	1024	900	960	25	29	625	841	725
	32	27	1024	729	864	26	30	676	900	780
	31	30	961	900	930	30	31	900	961	930
	34	30	1156	900	1020	27	37	729	1369	999
	34	34	1156	1156	1156	26	29	676	841	754
	34	28	1156	784	952	26	30	676	900	780
	39	27	1521	729	1570	26	35	676	1225	910
	33	29	1089	841	957	28	29	784	841	812
	32	31	1012	961	992	25	29	625	841	725
	35	29	1225	841	1015	22	34	484	1156	748
	26	33	676	1089	858	19	36	361	1296	684
	29	33	841	1089	857	24	35	576	1225	840
	33	30	1089	900	990					
	32	29	1024	841	928					
	31	30	961	900	930					
	29	28	841	784	812					
Sums	1016	925	34238	26874	38974	671	805	17515	27013	21513
Means	33	29.8				25.9	31			
N	30					26				

Raw Data for Hypothesis 8.4
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Attitudes of Challenging Work) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	37	28	1369	784	1036	37	29	1369	841	1073
	36	38	1296	1444	1068	27	28	729	784	756
	38	32	1444	1024	1216	33	32	1089	1024	1056
	36	33	1296	1089	1188	31	34	961	1156	1054
	37	37	1369	1369	1069	26	35	676	1225	910
	39	37	1521	1369	1043	24	36	576	1296	864
	35	37	1225	1369	1295	25	36	625	1296	900
	37	36	1369	1296	1332	27	27	729	729	729
	36	29	1296	841	1044	26	35	676	725	910
	37	30	1369	900	1110	28	32	784	1024	896
	33	32	1089	1024	1056	29	41	841	681	1989
	30	32	990	1024	960	30	29	900	841	870
	32	34	1024	1156	1088	23	32	529	1024	736
	31	34	961	1156	1054	25	32	625	1024	800
	32	31	1024	961	992	23	26	529	676	598
	33	31	1089	961	1023	28	27	784	729	756
	27	39	729	1521	1053	29	34	841	1156	786
	29	36	841	1296	1044	19	27	361	729	513
	31	34	961	1156	1054	25	30	625	900	750
	31	32	961	1024	992	30	27	900	729	810
	39	28	1521	784	999	34	31	1156	961	1054
	35	29	1225	841	1015	25	27	625	729	675
	35	32	1225	1024	1120	29	31	841	961	899
	33	31	1089	961	1023	28	35	784	725	980
	25	37	1510	1369	925	32	36	1024	651	1152
	33	35	1089	1225	1155	33	28	1089	784	924
	34	33	1156	1089	1122					
	28	33	784	1089	924					
	25	33	625	1089	825					
	30	28	900	784	840					
Sums	994	983	32567	33019	31665	725	785	20668	23400	22840
Means	32.3	32.8				28.6	30.2			
N	30					26				

Raw Data for Hypothesis 8.5
Analysis of Covariance for Experimental and Control Groups measured on Job Satisfaction Profile (Sense of Professional Responsibility) at Second Post-Test

	Experimental Group					Control Group				
	x_1	y_1	x_1^2	y_1^2	x_1y_1	x_2	y_2	x_2^2	y_2^2	x_2y_2
	35	30	1225	900	1050	24	31	576	961	744
	37	35	1369	1225	1295	26	30	676	900	780
	35	32	1225	1024	1120	23	30	529	900	690
	31	31	961	961	961	24	30	576	900	720
	32	38	1024	1444	1216	28	31	784	961	868
	38	33	1444	1089	1254	21	30	441	900	630
	37	32	1369	1024	1184	27	36	729	1296	972
	36	38	1296	1444	1368	24	30	576	900	720
	40	34	1600	1156	1360	26	33	676	1089	858
	31	29	961	841	899	22	31	484	961	682
	31	33	961	1089	1023	31	38	961	1444	1178
	34	30	1156	900	1020	38	29	1444	841	1102
	34	30	1156	900	1020	26	29	676	841	754
	27	32	1171	1024	864	24	32	576	1024	768
	31	35	961	1225	1085	27	33	729	1089	621
	30	30	900	900	900	30	24	900	576	720
	30	32	900	1024	960	23	33	529	1089	759
	30	32	900	1024	960	24	28	576	784	672
	32	32	1024	1024	1024	31	38	961	1444	1178
	33	34	1089	1156	1122	29	36	841	1296	1044
	30	38	900	1444	1140	26	26	676	676	676
	30	34	900	1156	1020	26	28	676	784	728
	29	29	841	841	841	26	31	676	961	806
	29	31	841	961	899	24	26	576	676	624
	32	28	1024	784	896	27	36	729	1296	972
	31	31	961	961	961	25	28	625	784	700
	37	23	1369	542	966					
	28	32	784	1024	896					
	33	33	1089	1089	1089					
	28	32	784	1024	896					
Sums	991	980	32158	31200	32169	676	797	18298	25373	20966
Means	32.3	32.6				25.5	30.7			
N	30					26				

APPENDIX F

MEANS, STANDARD DEVIATIONS AND STANDARD ERRORS ON THE CONTINUING NURSING EDUCATION AWARENESS INDEX:
1. CENTRAL HOSPITAL GROUPS
2. PERIPHERAL HOSPITAL GROUPS

APPENDIX F1

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Policy Issues) at Second Post-Test

N = 22, mean $\bar{x}$ = 29.2

x	$x - \bar{x}$	$(x - \bar{x})^2$
37	7.8	60.8
30	0.8	0.64
34	4.8	23
29	-0.2	0.04
26	-3.2	10.2
26	-3.2	10.2
27	-2.2	4.8
28	-1.2	1.4
34	4.8	23
27	-2.2	4.8
35	5.8	33.6
33	3.8	14.4
26	-3.2	10.2
32	2.8	7.8
26	-3.2	10.2
27	-2.2	4.8
28	-1.2	1.4
30	0.8	0.64
27	-2.2	4.8
37	7.8	60.8
26	-3.2	10.2
27	-2.2	4.8
$\Sigma x = 642$		$\Sigma(x-\bar{x})^2 = 302.5$

$$S.D. = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N-1}} = \sqrt{\frac{302.5}{21}} = \sqrt{14.4} = 3.79$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{3.79}{\sqrt{22}} = \frac{3.79}{4.69} = 0.81$$

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at Second Post-Test

N = 22, mean $\bar{x}$ = 28.8.

x	$x - \bar{x}$	$(x - \bar{x})^2$
26	-2.8	7.8
27	-1.8	3.2
34	5.2	27
28	-0.8	0.6
35	6.2	38.4
25	-3.8	14.4
32	3.2	10.2
29	0.2	0.04
26	-2.8	7.8
27	-1.8	3.2
32	3.2	10.2
32	3.2	10.2
29	0.2	0.04
28	-0.8	0.64
29	0.2	0.04
27	-1.8	3.2
25	-3.8	14.4
25	-3.8	14.4
28	-0.8	0.64
31	2.2	4.8
30	1.2	1.4
29	0.2	0.04
$\sum x = 634$		$\sum(x-\bar{x})^2 = 172.6$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{172.6}{21}} = \sqrt{8.22} = 2.87$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.87}{\sqrt{22}} = \frac{2.87}{4.69} = 0.61$$

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Implementation Process) at Second Post-Test

N = 22, mean $\bar{x}$ = 32.1.

x	$x - \bar{x}$	$(x - \bar{x})^2$
38	5.9	34.8
38	5.9	34.8
32	-0.1	0.01
31	-1.1	1.2
28	-4.1	16.8
33	0.9	0.8
35	2.9	8.4
32	-1.1	1.2
33	0.9	0.8
30	-2.1	4.4
35	2.9	8.4
32	-1.1	1.2
28	-4.1	16.8
36	3.9	15.2
31	-1.1	1.2
32	-0.1	0.01
31	-1.1	1.2
31	-1.1	1.2
24	-8.1	65.6
31	-1.1	1.2
33	0.9	0.8
32	-0.1	0.01
$\Sigma x = 706$		$\Sigma(x-\bar{x})^2 = 214.1$

$$\text{S.D.} = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N-1}} = \sqrt{\frac{214.1}{21}} = \sqrt{10.19} = 3.19$$

$$\text{S.E.} = \frac{\text{S.D.}}{\sqrt{N}} = \frac{3.19}{\sqrt{22}} = \frac{3.19}{4.69} = 0.68$$

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Learning Climate) at Second Post-Test

N = 22, mean $\bar{x}$ = 29.6.

x	$x - \bar{x}$	$(x - \bar{x})^2$
20	-9.6	92.16
30	0.4	0.16
25	-4.6	21.16
26	-3.6	12.96
30	0.4	0.16
30	0.4	0.16
35	4.4	19.36
30	0.4	0.16
31	1.4	1.96
30	0.4	0.16
28	-1.6	2.56
31	1.4	1.96
20	-9.6	92.16
31	1.4	1.96
31	1.4	1.96
34	3.4	11.56
30	0.4	0.16
35	4.4	19.36
29	-0.6	0.36
30	0.4	0.16
34	3.4	11.56
31	1.4	1.96
$\sum x = 651$		$\sum(x-\bar{x})^2 = 294.1$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{294.1}{21}} = \sqrt{14} = 3.74$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{3.74}{\sqrt{22}} = \frac{3.74}{4.69} = 0.8$$

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Individual Responsibility) at Second Post-Test

N = 22, mean $\bar{x}$ = 30.3.

x	$x - \bar{x}$	$(x - \bar{x})^2$
30	-0.3	0.59
31	0.7	0.49
27	-3.3	18.9
29	-1.3	1.7
34	3.7	13.7
31	0.7	0.49
32	1.7	2.9
30	-0.3	0.09
33	2.7	7.3
28	-2.3	5.3
32	1.7	2.9
33	2.7	7.3
28	-2.3	5.3
31	0.7	0.49
28	-2.3	5.3
27	-3.3	18.9
30	-0.3	0.09
30	-0.3	0.09
31	0.7	0.49
29	-1.3	1.7
32	1.7	2.9
31	0.7	0.49
$\sum x = 667$		$\sum(x-\bar{x})^2 = 97.4$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{97.4}{21}} = \sqrt{4.64} = 2.15$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.15}{\sqrt{22}} = \frac{2.15}{4.69} = 0.46$$

APPENDIX F2

Peripheral Hospital Groups: Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Policy Issues) at Second Post-Test

N = 32, mean $\bar{x}$ = 32.6

x	$x - \bar{x}$	$(x - \bar{x})^2$
33	0.4	0.16
34	1.4	1.96
32	-0.6	0.36
38	5.4	29.16
38	5.4	29.16
34	1.4	1.96
34	1.4	1.96
29	-3.6	12.96
29	-3.6	12.96
18	14.6	213.16
30	-2.6	6.76
31	-1.6	2.56
33	0.4	0.16
28	-4.6	21.16
18	14.6	213.16
31	-1.6	2.56
30	-2.6	6.76
38	5.4	29.16
32	-0.6	0.36
32	-0.6	0.36
35	2.4	5.76
38	5.4	29.16
30	-2.6	6.76
32	-0.6	0.36
32	-0.6	0.36
33	0.4	0.16
32	-0.6	0.36
32	-0.6	0.36
31	-1.6	2.56
32	-0.6	0.36
35	2.4	5.76
30	-2.6	6.76
$\Sigma x = 1043$		$\Sigma(x-\bar{x})^2 = 645.5$

$$S.D. = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N-1}} = \sqrt{\frac{645.5}{31}} = \sqrt{20.82} = 4.56$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{4.56}{\sqrt{32}} = \frac{4.56}{5.66} = 0.8$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Aims of Lifelong Learning) at Second Post-Test

N = 32, mean $\bar{x}$ = 29.6.

x	$x - \bar{x}$	$(x - \bar{x})^2$
30	0.4	0.16
31	1.4	1.96
34	3.4	11.56
29	-0.6	0.36
35	4.4	19.36
34	3.4	11.56
30	0.4	0.16
30	0.4	0.16
25	-4.6	21.16
29	-0.6	0.36
24	-5.6	31.36
30	0.4	0.16
31	1.4	1.96
31	1.4	1.96
28	-1.6	2.56
30	0.4	0.16
31	1.4	1.96
28	-1.6	2.56
29	-0.6	0.36
31	1.4	1.96
31	1.4	1.96
35	4.4	19.36
30	0.4	0.16
30	0.4	0.16
25	-4.6	21.16
26	-3.6	12.96
30	0.4	0.16
25	-4.6	21.16
31	1.4	12.96
28	-1.6	0.16
30	0.4	2.56
26	-3.6	1.96
$\sum x = 947$		$\sum(x-\bar{x})^2 = 206.5$

$$\text{S.D.} = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{206.5}{31}} = \sqrt{6.66} = 2.58$$

$$\text{S.E.} = \frac{\text{S.D.}}{\sqrt{N}} = \frac{2.58}{\sqrt{32}} = \frac{2.58}{5.66} = 0.46$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Implementation Process) at Second Post-Test

N = 32, mean $\bar{x}$ = 30.7

x	$x - \bar{x}$	$(x - \bar{x})^2$
31	0.3	0.9
35	4.3	18.5
28	-2.7	7.3
36	5.3	28.1
33	2.3	5.2
37	6.3	39.7
28	-2.7	7.3
28	-2.7	7.3
30	-0.7	0.5
31	0.3	0.09
34	3.3	10.9
34	3.3	10.9
32	1.3	1.7
27	-3.7	13.7
33	2.3	5.2
26	-4.7	22.1
28	-2.7	7.3
28	-2.7	7.3
32	1.3	1.7
30	-0.7	0.5
34	3.3	10.9
32	1.3	1.7
36	5.3	28.1
26	-4.7	22.1
33	2.3	5.2
35	4.3	18.5
27	-3.7	13.7
26	-4.7	22.1
33	2.3	5.2
30	-0.7	0.5
31	0.3	0.9
28	-2.7	7.3
$\sum x = 982$		$\sum(x-\bar{x})^2 = 323.4$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{323.4}{31}} = \sqrt{10.43} = 3.23$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{3.23}{\sqrt{32}} = \frac{3.23}{5.66} = 0.57$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Learning Climate) at Second Post-Test

N = 32, mean $\bar{x}$ = 30.7.

x	$x - \bar{x}$	$(x - \bar{x})^2$
33	2.3	5.3
35	4.3	18.5
29	-1.7	2.9
31	0.3	0.9
33	1.3	1.7
31	0.3	0.9
36	5.3	28.1
31	0.3	0.9
31	0.3	0.9
30	-0.7	0.5
32	1.3	1.7
30	-0.7	0.5
31	0.3	0.9
32	1.3	1.7
33	2.3	5.3
30	-0.7	0.5
31	0.3	0.9
30	-0.7	0.5
31	0.3	0.9
27	-3.7	13.7
26	-4.7	22.1
31	0.3	0.9
29	-0.7	0.5
28	-1.7	2.9
32	1.3	1.7
27	-3.7	13.7
28	-2.7	7.3
33	2.3	5.3
28	-2.7	7.3
31	0.3	0.9
31	0.3	0.9
31	0.3	0.9
$\sum x = 982$		$\sum(x-\bar{x})^2 = 151.6$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{151.6}{31}} = \sqrt{4.89} = 2.21$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.21}{\sqrt{32}} = \frac{2.21}{5.66} = 0.39$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Continuing Nursing Education Awareness Index (Individual Responsibility) at Second Post-Test

N = 32, mean $\bar{x}$ = 29.2.

x	$x - \bar{x}$	$(x - \bar{x})^2$
32	2.8	7.84
36	6.8	46.24
27	-2.2	4.84
35	5.8	33.64
32	2.8	7.84
34	4.8	23.04
30	0.8	0.64
28	-1.2	1.44
29	-0.2	0.04
31	1.8	3.24
29	-0.2	0.04
29	-0.2	0.04
28	-1.2	1.44
32	2.8	7.84
25	-4.2	17.64
33	3.8	14.44
26	-3.2	10.24
24	-5.2	27.04
33	3.8	14.44
27	-2.2	4.84
29	-0.2	0.04
29	-0.2	0.04
27	-2.2	4.84
28	-1.2	1.44
23	-6.2	38.44
27	-2.2	4.84
28	-1.2	1.44
25	-4.2	17.64
31	1.8	3.24
28	-1.2	1.44
29	0.2	0.04
29	0.2	0.04
$\sum x = 934$		$\sum(x-\bar{x})^2 = 300.3$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{300.3}{31}} = \sqrt{9.69} = 3.11$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{3.11}{\sqrt{32}} = \frac{3.11}{5.66} = 0.55$$

APPENDIX G

MEANS, STANDARD DEVIATIONS AND STANDARD ERRORS ON JOB SATISFACTION PROFILE:

1. CENTRAL HOSPITAL GROUPS
2. PERIPHERAL HOSPITAL GROUPS

APPENDIX G1

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Perception of Personal Achievement) at Second Post-Test

N = 22, mean $\bar{x}$ = 30.6

x	$x - \bar{x}$	$(x - \bar{x})^2$
30	-0.7	0.49
31	0.3	0.09
33	2.3	5.29
31	0.3	0.09
33	2.3	5.29
24	-6.7	44.9
28	-2.7	7.29
30	-0.7	0.49
31	0.3	0.09
32	1.3	1.69
38	7.3	53.29
25	-5.7	32.5
38	7.3	53.29
33	2.3	5.29
36	5.3	28.09
36	5.3	28.09
29	-1.7	2.89
24	-6.7	44.89
26	-4.7	22.09
30	-0.7	0.49
29	-1.7	2.89
28	-2.7	7.29
$\Sigma x = 675$		$\Sigma(x-\bar{x})^2 = 346.8$

$$S.D. = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N-1}} = \sqrt{\frac{346.8}{21}} = \sqrt{16.5} = 4.06$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{4.06}{\sqrt{22}} = \frac{4.06}{4.69} = 0.87$$

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Sense of Professional Recognition) at Second Post-Test

N = 22, mean $\bar{x}$ = 30.2.

x	$x - \bar{x}$	$(x - \bar{x})^2$
27	-3.2	10.2
41	10.8	116.6
32	1.8	3.2
29	-1.2	1.4
34	3.8	14.4
32	1.8	3.2
35	4.8	23
36	5.8	33.6
32	1.8	3.2
27	-3.2	10.2
25	-5.2	27
27	-3.2	10.2
26	-4.2	17.6
30	-0.2	0.04
36	5.8	33.6
35	4.8	23
27	-3.2	10.2
32	1.8	3.2
25	-5.2	27
27	-3.2	10.2
24	3.8	14.4
31	0.8	0.64
$\sum x = 664$		$\sum(x-\bar{x})^2 = 396.1$

$$\text{S.D.} = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{396.1}{21}} = \sqrt{18.86} = 4.34$$

$$\text{S.E.} = \frac{\text{S.D.}}{\sqrt{N}} = \frac{4.34}{\sqrt{22}} = \frac{4.34}{4.69} = 0.93$$

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Perception of Personal Growth) at Second Post-Test

N = 22, mean $\bar{x}$ = 32.3.

x	$x - \bar{x}$	$(x - \bar{x})^2$
30	-2.3	5.3
37	4.7	22.1
27	-5.3	28.1
32	-0.3	0.09
38	5.7	32.5
31	-1.3	1.7
34	1.7	2.9
27	-5.3	28.1
36	3.7	13.7
32	-0.3	0.09
29	-3.3	10.9
32	-0.3	0.09
29	-3.3	10.9
27	-5.3	28.1
30	-2.3	5.3
26	3.7	13.7
33	0.7	0.5
32	-0.3	0.09
36	3.7	13.7
35	2.7	7.3
32	-0.3	0.09
35	2.7	7.3
$\Sigma x = 710$		$\Sigma(x-\bar{x})^2 = 232.6$

$$S.D. = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N-1}} = \sqrt{\frac{232.6}{21}} = \sqrt{11.08} = 3.33$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{3.33}{\sqrt{22}} = \frac{3.33}{4.69} = 0.71$$

Central Hospital Groups:
Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Sense of Professional Responsibility) at Second Post-Test

N = 22, mean $\bar{x} = 31$.

x	$x - \bar{x}$	$(x - \bar{x})^2$
33	2	4
31	0	0
34	3	9
21	-10	100
37	6	36
34	3	9
36	5	25
29	-2	4
21	-10	100
37	6	36
30	-1	1
30	-1	1
33	2	4
27	-4	16
29	-2	4
30	-1	1
31	0	0
35	4	16
30	-1	1
33	2	4
33	2	4
29	-2	4
$\Sigma x = 682$		$\Sigma(x-\bar{x})^2 = 379$

$$\text{S.D.} = \sqrt{\frac{\Sigma(x-\bar{x})^2}{N-1}} = \sqrt{\frac{379}{21}} = \sqrt{18.05} = 4.25$$

$$\text{S.E.} = \frac{\text{S.D.}}{\sqrt{N}} = \frac{4.25}{\sqrt{22}} = \frac{4.25}{4.69} = 0.91$$

Central Hospital Groups: Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Attitudes of Challenging Work) at Second Post-Test

N = 22, mean $\bar{x}$ = 30.3.

x	$x - \bar{x}$	$(x - \bar{x})^2$
25	-5.3	28.1
30	-0.3	0.09
28	-2.3	5.3
32	1.7	2.9
39	8.7	75.7
34	3.7	13.7
30	-0.3	0.09
28	-2.3	5.3
27	-3.3	10.9
31	0.7	0.09
30	-0.3	0.09
34	3.7	13.7
35	4.7	22.1
32	1.7	2.9
26	-4.3	18.5
30	-0.3	0.09
30	-0.3	0.09
25	-5.3	28.1
30	-0.3	0.09
36	5.7	32.5
26	-4.3	18.5
28	-2.3	5.3
$\sum x = 666$		$\sum(x-\bar{x})^2 = 281.1$

$$\text{S.D.} = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{281.1}{21}} = \sqrt{13.39} = 3.66$$

$$\text{S.E.} = \frac{\text{S.D.}}{\sqrt{N}} = \frac{3.66}{\sqrt{22}} = \frac{3.66}{4.69} = 0.78$$

APPENDIX G2

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Perceptions of Personal Achievement) at Second Post-Test

N = 32, mean $\bar{x}$ = 30.4

x	$x - \bar{x}$	$(x - \bar{x})^2$
36	5.6	31.36
29	-1.4	1.96
28	-2.4	5.76
34	3.6	12.96
27	-3.4	11.56
29	-1.4	1.96
26	-4.4	19.36
32	1.6	2.56
32	1.6	2.56
28	-2.4	5.76
28	-2.4	5.76
33	2.6	6.76
30	-0.4	0.16
29	-1.4	1.96
37	6.6	43.56
31	0.6	0.36
27	-3.4	11.56
29	-1.4	1.96
32	1.6	2.56
27	-3.4	11.56
33	2.6	6.76
30	-0.4	0.16
33	2.6	6.76
30	-0.4	0.16
25	-5.4	29.16
33	2.6	6.76
31	0.6	0.36
33	2.6	6.76
27	-3.4	11.56
33	2.6	6.76
32	1.6	2.56
29	-1.4	1.96
$\sum x = 973$		$\sum(x-\bar{x})^2 = 261.7$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{261.7}{31}} = \sqrt{8.44} = 2.91$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.91}{\sqrt{32}} = \frac{2.91}{5.66} = 0.51$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Sense of Professional Recognition) at Second Post-Test

N = 32, mean $\bar{x}$ = 33.

x	$x - \bar{x}$	$(x - \bar{x})^2$
32	-1	1
28	-5	25
31	-2	4
36	3	9
36	3	9
33	0	0
34	1	1
36	3	9
34	1	1
34	1	1
28	5	25
27	-6	36
30	-3	9
33	0	0
29	6	36
34	2	4
35	2	4
37	4	16
25	2	4
32	-1	1
37	4	16
33	0	0
32	-1	1
31	-2	4
35	2	4
29	-4	16
32	-1	1
38	5	25
34	0	0
32	3	9
36	-1	1
33	1	1
$\sum x = 1056$		$\sum(x-\bar{x})^2 = 273$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{273}{31}} = \sqrt{8.8} = 2.97$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.97}{\sqrt{32}} = \frac{2.97}{5.66} = 0.52$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Perception of Personal Growth) at Second Post-Test

N = 32, mean $\bar{x}$ = 32.6.

x	$x - \bar{x}$	$(x - \bar{x})^2$
30	-2.6	6.76
32	1.4	1.96
34	1.4	1.96
38	5.4	29.16
30	-2.6	6.76
32	-0.6	0.36
38	5.4	29.16
34	1.4	1.96
32	-0.6	0.36
29	-3.6	12.96
33	0.4	0.16
29	-3.6	12.96
32	-0.6	0.36
33	0.4	0.16
38	5.4	29.16
31	-1.6	2.56
35	2.4	5.76
28	-4.6	21.16
32	-0.6	0.36
31	-1.6	2.56
30	-2.6	6.76
38	5.4	29.16
31	-1.6	2.56
32	-0.6	0.36
32	-0.6	0.36
32	-0.6	0.36
33	0.4	0.16
34	1.4	1.96
30	-2.6	6.76
35	2.4	5.76
32	0.6	0.36
$\sum x = 1043$		$\sum(x-\bar{x})^2 = 221.32$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{221.32}{31}} = \sqrt{7.14} = 2.67$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.67}{\sqrt{32}} = \frac{2.67}{5.66} = 0.47$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Attitudes of Challenging Work) at Second Post-Test

N = 32, mean $\bar{x}$ = 30.4.

x	$x - \bar{x}$	$(x - \bar{x})^2$
36	5.6	31.36
31	0.6	0.36
32	1.6	2.56
27	-3.4	11.56
28	-2.4	5.76
29	-1.4	1.96
31	0.6	0.36
30	-0.4	0.16
26	-4.4	19.36
29	-1.4	1.96
27	-3.4	11.56
33	2.6	6.76
28	-2.4	5.76
28	-2.4	5.76
32	1.6	2.56
32	1.6	2.56
37	6.6	43.56
29	-1.4	1.96
34	3.6	12.96
29	-1.4	1.96
32	1.6	2.56
27	-3.4	11.56
33	2.6	6.76
30	-0.4	0.16
33	2.6	6.76
30	-0.4	0.16
25	-5.4	29.16
33	2.6	6.76
27	-3.4	11.56
33	2.6	6.76
32	1.6	2.56
29	-1.4	1.96
$\sum x = 973$		$\sum(x-\bar{x})^2 = 257.5$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{257.5}{31}} = \sqrt{8.31} = 2.88$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.88}{\sqrt{32}} = \frac{2.88}{5.66} = 0.51$$

Peripheral Hospital Groups:
Means, Standard Deviations and Standard Errors on Job Satisfaction Profile (Sense of Professional Responsibility) at Second Post-Test

N = 32, mean $\bar{x}$ = 29.8.

x	$x - \bar{x}$	$(x - \bar{x})^2$
33	3.2	10.24
27	-2.8	7.84
31	1.2	1.44
33	3.2	10.24
31	1.2	1.44
29	-0.8	0.64
29	-0.8	0.64
37	7.2	51.84
30	0.2	0.4
33	3.2	10.24
23	-6.8	46.24
31	1.2	1.44
30	0.2	0.4
27	-2.8	7.84
27	-2.8	7.84
29	-0.8	0.64
26	-3.8	-14.4
33	3.2	10.24
30	0.2	0.4
30	0.2	0.4
27	-2.8	7.84
29	-0.8	0.64
34	4.2	17.64
28	-1.8	3.24
29	-0.8	0.64
30	0.2	0.4
28	-1.8	3.24
30	0.2	0.4
31	1.2	1.44
29	-0.8	0.64
33	3.2	10.24
27	-2.8	7.84
$\sum x = 954$		$\sum(x-\bar{x})^2 = 239$

$$S.D. = \sqrt{\frac{\sum(x-\bar{x})^2}{N-1}} = \sqrt{\frac{239}{31}} = \sqrt{7.71} = 2.78$$

$$S.E. = \frac{S.D.}{\sqrt{N}} = \frac{2.78}{\sqrt{32}} = \frac{2.78}{5.66} = 0.49$$

APPENDIX H

SESSION HANDOUT

APPENDIX H

Session Handout: Outline of Topics.

1. Nursing Knowledge and Skills

1. What is Nursing?
2. Graduation - the end or the beginning?
3. Changes and challenges in nursing practice.
4. The future role of nurses in the delivery of health care.
5. The knowledge and technology explosion.
6. The contribution of nursing knowledge to nursing practice.
7. Identifying new knowledge and skills.
8. The problem of Clinical Incompetence.
9. The need for Continuing Education.
10. Self evaluation and self determination.

Suggested Readings.

1. McFarlane, J. (1981) -"Changes in the Nature of Nursing." The Australian Nurses Journal, Vol. 11, No. 5, pp.39-40.
2. Bohm, S. M. (1977) - "Towards 2002: A Community Perspective." The Australian Nurses Journal, Vol. 7, No. 5, pp.30-33.

2. Ward Management.

1. Administration at the bedside.
2. Patient care.
3. Patient's day.
4. Shifts.
5. Rosters.
6. Reports.
7. Team work.
8. The first line manager.
9. Order/Direction.
10. Co-ordination.

Suggested Readings.

1. Armstrong, M. (1985) - "Practical Nursing Management." Edward Arnold. pp.9-25.
2. Manez, J. (1978) - "The Untraditional Nurse Manager: Agent of change and changing Agent." Hospital, January 1978, pp.62-65.

3. Hospital Policies.

1. Hours of Duty.
2. Sickness/Absenteeism.
3. Leave Entitlement.
4. Salary Arrangement.
5. Uniforms.
6. Resignation Procedures.
7. Conduct and Behaviour.
8. Grievance Procedures.
9. Disciplinary Procedures.
10. Board and Lodging.

4. Supervision and Staff Appraisal.

1. Line Organization.
2. Span of Control.
3. Supervision as Control.
4. Supervision as Coaching.
5. Supervisory Technique.
6. Correcting Performance.
7. Performance Appraisal.
8. Professional Relationships.
9. Evaluation Principles.
10. The Evaluation Tools.

Suggested Readings.

1. Levenstein, A. (1984) - "The Art and Science of Supervision." Supervisor Nurse, February, pp.44-46.
2. Gilles, D. A. (1982) - "Nursing Management: A Systems Approach." Chapter 30, pp.421-433.

5. Quality Assurance/Nursing Audit.

1. Quality Assurance.
2. Assurance Activities.
3. Principles Underlying Assurance Efforts.
4. Instituting a Quality Assurance Programme.
5. Developing Quality Assurance Criteria.
6. Reliability and Validity of Measuring Tools.
7. Types of Nursing Audits.
8. Writing Audit Criteria.
9. Performing the Audit.
10. Analysing the Audit.

Suggested Readings.

1. Schmadl, J. (1979) - "Quality Assurance: Examination of the Concept." Nursing Outlook, July, pp.462-465.

2. Corn, F. (1984) - "The Nursing Care Audit: A Tool for Peer Review." Supervisor Nurse, February, pp.20-28.

6. Communication and Interprofessional Skills.

1. Nursing as communicating.
2. Interpersonal communication in the therapeutic process.
3. Cues in nursing communication.
4. Beliefs and values of the effective nurse-communicator.
5. Speaking and listening assertively.
6. Informing and instructing in nursing practice.
7. Interdisciplinary teams and communication.
8. Communication and groups.
9. Nurses as public speakers.
10. Communication in the hierarchical organization.

Suggested Readings.

1. Bradley, J. C. (1984) - "Communication in the Nursing Context." Appleton-Century-Crofts, Norwalk, Connecticut

2. Edwards, B. J. (1985) - "Communication in Nursing Practice." Mosby.

7. Resource Allocation.

1. Terms Used.
2. Funding the Health Service.
3. Nursing Budget.
4. Local Constraints.
5. Outside Constraints.
6. Proper Staffing.
7. Assigning Personnel.
8. Nursing Workload.
9. Patient Census Data.
10. Absenteeism/Staff Turnover.

Suggested Readings

1. Meyer, D. (1978) -"A Patient Information and Workload Measurement Systems." Morgantown, North Carolina.
2. Armstrong, M. (1985) - "Practical Nursing Management." Edward Arnold, pp.146-199.

8. The Extended Role of the Nurse.

1. Role Theory.
2. The Nurse's role in the health care setting.
3. The widening varieties of care roles.
4. Liaison consultation.
5. The Clinical Nurse Specialist.
6. Consumer Expectations.
7. The challenge to the nurse.
8. The need for nursing practice legislation.
9. Hospital Policy and Health Department Policy.
10. The Medical Practitioners Act.

Suggested Readings.

1. Tate, B. (1977) - "The Nurses' Dilemma." Geneva: International Council of Nurses.

2. McFarlane, J. (1981) - "Changes in the Nature of Nursing." The Australian Nurses Journal, Vol. 11, No. 5, pp.39-44.

9. Innovation and Changes.

1. Pressures for Organizational Change.
2. Coping with change.
3. Types of changes.
4. Stages of changes.
5. Effects of change.
6. Establishing a climate supportive of change.
7. Handling resistance to change.
8. Strategies for changes.
9. The change process.
10. Nursing and social changes.

Suggested Readings.

1. Stevens, B. (1977) - "Management of continuity and Change in Nursing." Journal of Nursing Administration, April, pp.26-31.

2. Havelock, R. C. (1983) - "The Change Agent's Guide to Innovation." Englewood Cliffs, New Jersey, Educational Technology Publication.

10. Career Opportunities and Development.

1. Exploring career options.
2. Choosing a career line.
3. Getting a job.
4. Being interviewed.
5. Learning job skills.
6. Getting ahead at work.
7. Getting job protection.
8. Getting vocational counseling.
9. Changing jobs.
10. Learning advanced job skills.

Suggested Readings.

1. Sovie, M. D. (1982) -"Fostering Professional Nursing Careers in the Hospitals." The Journal of Nursing Administration, December, pp.5-11.
2. Benner, P. (1982) - "From Novice to Expert." American Journal of Nursing, March, pp.402-407.

11. The Nurses Awards (Public Hospital Nurses' (State) Award).

1. Arrangement.
2. Basic wages.
3. Definition.
4. Hours of work.
5. Roster.
6. Special Allowances.
7. Fares and Expenses.
8. Part-time and Casual Employees.
9. Leaves (Annual, Long Service, Maternity and Sick Leave).
10. Disputes.

Suggested Reading.

1. Department of Health, N.S.W. Circular - Public Hospital Nurses (State) Award.

12. Job Description.

1. Job title.
2. Job content.
3. Principal duties.
4. Job specifications.
5. Organizational relationship.
6. Scope of responsibility.
7. Physical and Mental Requirement.
8. Qualifications.
9. Working conditions.
10. Awards.

Suggested Readings.

1. Livy, B. (1982) - "Job Evaluation: A Critical Review." London, George Allen and Unwin.
2. Giles, D. (1982) - "Nursing Management." L.B. Saunders Co., pp.133-149.

13. Professional and Industrial Organizations.

1. Industrial Relations.
2. Collective Bargaining.
3. Reasons for Unionization by Nurses.
4. Politics of Health Care and Nursing.
5. Professional organizations.
6. International Council of Nurses.
7. College of Nursing, Australia.
8. New South Wales College of Nursing.
9. Royal Australian Nursing Federation.
10. New South Wales Nurses' Association.

Suggested Readings.

1. New South Wales Nurses Association Membership Handbook.

2. Tiffany, R. (1982) - "Nursing - Industry or Profession." The Australian Nurses Journal, Vol. 11, No. 9, pp.43-45.

14. Nurses Interest Groups.

1. Australian Association of Geriatric Nursing Care.
2. Australian Congress of Mental Health Nurses.
3. Australian Nurse Teachers' Association.
4. Clinical Nurse Specialists Association.
5. Infections Control Association.
6. New South Wales Midwifery Association.
7. New South Wales Nurses Research Interest Group.
8. New South Wales Operating Theatre Association.
9. The Institute of Nurse Administrators of New South Wales.
10. Australian Association of Stoma Therapists.

15. Professional Responsibilities and Obligation.

1. Definition of a Profession.
2. Professionalism.
3. Standards of Nursing Practice.
4. Accountability and Responsibility.
5. Current issues, Future trends.
6. Ethical issues.
7. Code of practice.
8. The patient and the nurse.
9. Confidentiality.
10. Changes in law.

Suggested Readings.

1. McCloskey, J. C. (1981) - "The Professionalisation of Nursing: International Nursing Reviews.: Vol. 28, February, pp.40-47.

2. Tescher, B. E. (1977) - "Definition of a Standard for Clinical Nursing Practice." Journal of Nursing Administration, March, pp.32-44.

16. Professional Philosophy.

1. Nursing Philosophy and objectives.
2. Nursing - skilled work or a profession.
3. Nursing Knowledge.
4. Autonomy.
5. Education.
6. Involvement.
7. Commitment.
8. Identification.
9. Objectivity.
10. Code of ethics.

Suggested Readings.

1. Roberts, K. (1980) - "Nursing: Profession or Pretender?" The Australian Nurses Journal, Vol. 9, No. 10, May, pp.33-36.

2. Tiffany, R. (1982) - "Nursing - Industry of Profession." The Australian Nurses Journal, Vol. 11, No. 9, April, pp.43-45.

17. The Role Transition.

1. The Novice.
2. The Advanced Beginner.
3. The Competent.
4. The Proficient.
5. The Expert.
6. The Causes of Role Transition Trauma.
7. Building Awareness of the transition process.
8. Clarifying roles and expectations.
9. Attending to personal needs.
10. Developing a systematic programme of self care.

Suggested Readings.

1. Bridges, W. (1980) - "Transitions." Mass. Addison Wesley.
2. Kelley, K. D. (1979) - "The Emotional Cycle of change." San Diego University Associates.

18. Personal Goals.

1. Choosing Hobbies.
2. Finding new friends.
3. Joining Organizations.
4. Planning your time.
5. Leading recreational activities.
6. Making better decisions.
7. Getting along with people.
8. Preparing for Marriage.
9. Raising children.
10. Financial planning.

Suggested Reading.

1. Knowles, M. (1979) - "The Adult Learner: A neglected species." Gulf Publishing Co. Houston.

19. Coping with Stress.

1. Attitudes towards stress.
2. Identification of stress and stressor.
3. Potential Sources of Nursing Stress.
4. Strategies for coping with stress.
5. Staff counselling.
6. Social Clubs.
7. Welfare groups.
8. Physical methods.
9. Psychological method.
10. Legislative provisions: Occupational Health and Safety Act,1983.

Suggested Readings.

1. Cherniss, C. (1980) - "Staff Burnout." London, Sage.
2. Selyle, H. (1976) - "The Stress of Life." New York, McGraw Hill.

APPENDIX I

INTERVIEW SCHEDULE

APPENDIX I.

Interview Schedule - Questions for Interview.

Introduction:

Thank you for participating in the interview.

The purpose of the interview is to identify some major variables that influence nurse's commitment to continuing nursing education. It is important that you should be assured that this interview is completely confidential. No one, apart from me and my supervisor, will have access to it. There will be nothing on the report that will identify you.

There are a considerable number of questions. Some of these questions may be not applicable in your particular situation, it is important that each interviewee is asked the same questions, but please indicate at once if any question is not applicable. I would also appreciate if you could provide illustration of your answer when you can.

May I also use the tape recorder to record your comments accurately?

Section 1.

1). Does your hospital have established policies regarding continuing education?

2). Are those policies well publicised?

3). Does the hospital provide opportunities for staff to participate in continuing education.

4). Does it provide time for you to attend continuing education?

5). Does it provide recognition for the nurse who successfully completes continuing education programme?

6). Does it attempt to identify staff learning needs and refer them to appropriate resources?

7). Does it provide opportunities for staff to implement ideas gained during continuing education activities?

8). Is there a mechanism for staff to disseminate information regarding new ideas learnt?

9). What is the philosophy of your clinical area in relation to continuing education?

10). Is that philosophy similar to your personal one?

11). Does staff in the clinical area try to find out what you need and want to learn about?

12). Do you know what your clinical area is attempting to achieve in relation to continuing education?

13). Does staff carry out practice that test new ideas?

14). How do other staff respond to someone who tries to implement new ideas?

Section 2.

1. In relation to the experimental curriculum you had participated, were the topics relevant to your initial work experience?
2. Does the programme assist you to assume new role after your graduation?
3. Does it enhance your awareness and enthusiasm for continuing learning? How?
4. Does it assist you to develop skill in identifying your learning needs?
5. Does it encourage you to participate actively in learning? How?
6. Does it foster analytic and problem solving skills?
7. Have you implemented any idea you learnt from the programme?
8. How do you look at your responsibility for learning?
9. Do you assess your own educational needs from time to time?
10. Do you seek out activities to meet your learning needs? How do you go about it?
11. Do you make your professional needs known to the appropriate source? What is the response?
12. Are you able to share ideas you gained from continuing education with peers?
13. What do you do if you observe some practices that you are uncomfortable with?
14. Do you feel you have developed a questioning attitude as a result of participating the programme?