A programme for professional development of diabetes educators

Rhonda Griffiths
University of Wollongong

Recommended Citation
A PROGRAMME FOR PROFESSIONAL DEVELOPMENT OF DIABETES EDUCATORS

A thesis submitted in partial fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE (HONOURS)

from

THE UNIVERSITY OF WOLLONGONG

by

RHONDA GRIFFITHS, R.N., C.M., Dip.Teach. (Nursing), B.Ed. (Nursing)

Faculty of Health and Behavioural Sciences 1990.
ABSTRACT

This Thesis is concerned with developing a programme of study that will equip diabetes educators with skills and knowledge necessary for professional practice.

A curriculum development framework is used to examine the multiplicity of factors influencing the role and functions of diabetes educators. Curriculum theory is reviewed, contextual factors relevant to diabetes education identified, and their influence on patients with diabetes and on diabetes educators is examined. The theoretical underpinnings of diabetes education are articulated and translated into the core competencies diabetes educators must possess. Data obtained from health professionals and patients with diabetes are presented in a needs analysis.

Finally, a curriculum reflecting identified competencies and the needs analysis is presented.
ACKNOWLEDGEMENTS

This thesis could not have reached its conclusion without the support and dedication of a number of people.

In addition to those who participated in the data collection, I am particularly indebted to four people - my supervisor, Associate Professor Christine Ewan who has been a constant source of stimulation and inspiration; to Dr. Robert Moses, who likewise has provided stimulation and assisted the momentum of the project; and to Arthur and Stuart for their unconditioned and uncomplaining support and encouragement.

I am also thankful for the word processing skills of Miss Kirsty Todd and Mrs Magda Heaslip.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section/Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABSTRACT</strong></td>
<td>i</td>
</tr>
<tr>
<td><strong>ACKNOWLEDGEMENTS</strong></td>
<td>ii</td>
</tr>
<tr>
<td><strong>TABLE OF CONTENTS</strong></td>
<td>iii</td>
</tr>
<tr>
<td><strong>LIST OF TABLES</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LIST OF FIGURES</strong></td>
<td></td>
</tr>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Aims of this Study</td>
<td>2</td>
</tr>
<tr>
<td>Research Questions</td>
<td>3</td>
</tr>
<tr>
<td>Organisation of the Thesis</td>
<td>3</td>
</tr>
<tr>
<td><strong>SECTION A</strong></td>
<td></td>
</tr>
<tr>
<td><strong>OVERVIEW OF CURRICULUM DESIGN</strong></td>
<td></td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td><strong>I. CURRICULUM DESIGN</strong></td>
<td>6</td>
</tr>
<tr>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td>Curriculum Theories and Models</td>
<td>7</td>
</tr>
<tr>
<td>Context of a Curriculum</td>
<td>10</td>
</tr>
<tr>
<td>Needs Assessment</td>
<td>12</td>
</tr>
<tr>
<td>Definition of Core Competencies</td>
<td>12</td>
</tr>
<tr>
<td>Determining Content, Structure and Scope</td>
<td>14</td>
</tr>
<tr>
<td>Curriculum Process and Resources</td>
<td>15</td>
</tr>
<tr>
<td>Evaluation</td>
<td>21</td>
</tr>
<tr>
<td>Summary</td>
<td>22</td>
</tr>
<tr>
<td><strong>SECTION B</strong></td>
<td></td>
</tr>
<tr>
<td><strong>THE CONTEXT OF DIABETES EDUCATION</strong></td>
<td></td>
</tr>
<tr>
<td><strong>II. THE CLINICAL CONTEXT</strong></td>
<td>24</td>
</tr>
<tr>
<td>Introduction</td>
<td>25</td>
</tr>
<tr>
<td>The Significance of Diabetes</td>
<td>25</td>
</tr>
<tr>
<td>The Nature of Diabetes Education</td>
<td>26</td>
</tr>
<tr>
<td>The Aim of Patient Education</td>
<td>28</td>
</tr>
<tr>
<td>Outcome Measures for Diabetes Education</td>
<td>29</td>
</tr>
<tr>
<td>Health Promotion Goals</td>
<td>30</td>
</tr>
<tr>
<td>Attitudes to Illness</td>
<td>31</td>
</tr>
<tr>
<td>Role Delineation in Diabetes Care</td>
<td>36</td>
</tr>
<tr>
<td>Summary</td>
<td>37</td>
</tr>
</tbody>
</table>
### III. THE PROFESSIONAL AND POLITICAL CONTEXT

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>38</td>
</tr>
<tr>
<td>The Role and Responsibilities of Diabetes Educators</td>
<td>39</td>
</tr>
<tr>
<td>Diabetes Educators in Australia</td>
<td>40</td>
</tr>
<tr>
<td>The History</td>
<td>40</td>
</tr>
<tr>
<td>ADEA's Goals</td>
<td>42</td>
</tr>
<tr>
<td>Accreditation of Diabetes Educators</td>
<td>43</td>
</tr>
<tr>
<td>Ongoing Recognition</td>
<td>45</td>
</tr>
<tr>
<td>The International Context</td>
<td>46</td>
</tr>
<tr>
<td>Quality Assurance for Diabetes Patient Education</td>
<td>47</td>
</tr>
<tr>
<td>Diabetes Educators as a Professional Group</td>
<td>49</td>
</tr>
<tr>
<td>Socialisation for Professional Practice</td>
<td>49</td>
</tr>
<tr>
<td>Identifying a Profession</td>
<td>50</td>
</tr>
<tr>
<td>Professionalising Diabetes Educators</td>
<td>52</td>
</tr>
<tr>
<td>Professional Relationships</td>
<td>55</td>
</tr>
<tr>
<td>Summary</td>
<td>57</td>
</tr>
</tbody>
</table>

### IV. THE EDUCATIONAL CONTEXT

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and Content of Teaching</td>
<td>58</td>
</tr>
<tr>
<td>Qualifications and Experiences of Teachers</td>
<td>59</td>
</tr>
<tr>
<td>Characteristics and Expectations of Learners and Teachers</td>
<td>59</td>
</tr>
<tr>
<td>Review of Patient Education Programmes</td>
<td>62</td>
</tr>
<tr>
<td>Review of Programmes for Diabetes Educators</td>
<td>65</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>68</td>
</tr>
<tr>
<td>Future Education for Diabetes Educators</td>
<td>71</td>
</tr>
<tr>
<td>Summary</td>
<td>71</td>
</tr>
</tbody>
</table>

### SECTION C

#### CORE COMPETENCIES FOR DIABETES EDUCATORS

### V. DEFINING CORE COMPETENCIES

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>74</td>
</tr>
<tr>
<td>Standards of Professional Practice</td>
<td>75</td>
</tr>
<tr>
<td>Implications of Core Competencies</td>
<td>77</td>
</tr>
<tr>
<td>Implications for Education Programmes</td>
<td>77</td>
</tr>
<tr>
<td>Implications for the Evaluation of Competence</td>
<td>78</td>
</tr>
<tr>
<td>Implications for the Practice of Diabetes Educators</td>
<td>78</td>
</tr>
<tr>
<td>Summary</td>
<td>79</td>
</tr>
</tbody>
</table>

### VI. NEEDS ASSESSMENT

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>80</td>
</tr>
<tr>
<td>Questionnaire Design</td>
<td>81</td>
</tr>
<tr>
<td>Pilot Study</td>
<td>82</td>
</tr>
<tr>
<td>Location of the Study</td>
<td>83</td>
</tr>
<tr>
<td>Data Collection and Recording</td>
<td>84</td>
</tr>
<tr>
<td>Diabetes Educators' Resource Survey</td>
<td>84</td>
</tr>
<tr>
<td>Diabetic Patients' Attitudinal Questionnaire</td>
<td>85</td>
</tr>
<tr>
<td>Physicians/Endocrinologists' Interview</td>
<td>86</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>86</td>
</tr>
<tr>
<td>Diabetes Educators' Resource Survey</td>
<td>86</td>
</tr>
<tr>
<td>Diabetic Patients' Attitudinal Questionnaire</td>
<td>87</td>
</tr>
<tr>
<td>Physicians/Endocrinologists' Interview</td>
<td>87</td>
</tr>
</tbody>
</table>
### VII. RESULTS AND DISCUSSION
- Diabetes Educators' Resource Survey 89
- Diabetic Patients' Attitudinal Questionnaire 105
- Physicians'/Endocrinologists' Interview 111
- Conclusion 116

### SECTION D
DEFINING CONTENT AND PROCESS

### VIII. COMPETENCIES FOR AUSTRALIAN DIABETES EDUCATORS
- Introduction 119
- Extending the Official Role Description 120
- Conclusion 122

### IX. THEORETICAL FOUNDATIONS OF DIABETES EDUCATION
- Introduction 125
- Learning and Behaviour Change Theories 125
  - Cognitive Learning Theory 126
  - Motivation 126
  - Behavioural Learning Theory 127
  - Behaviour Modification 128
  - Social Learning Theory 128
  - The Health Belief Model 128
- Management Theory 129
  - Negotiation 130
- Communication Theory 131
  - Therapeutic Communication 132
  - Communication within Organisations 133
  - Conflict Resolution 134
  - Public Communication 134
- Problem Solving 134
- Evaluation 135
- Research 136
- Summary 137

### X. CONTENT SEQUENCING AND PROCESS
- Introduction 139
- Curriculum Model 139
- Context of the Curriculum 141
- Content, Scope and Sequencing 142
- Conclusion 145

### SECTION E
CURRICULUM EVALUATION

### XI. CURRICULUM EVALUATION
- Introduction 149
- Why Evaluate? 149
- Evaluation Process 150
- Evaluation Models 151
## XII. EVALUATION STUDY
- Method of Evaluation
- Results and Discussion
  - Curriculum Design and Process
  - Supervised Clinical Experience
  - Content
- Conclusion
- Curriculum Revision

## XIII. CONCLUSIONS AND RECOMMENDATIONS
- Training Programmes
- Recommendations

## REFERENCES

## APPENDIXES
- **Appendix 1**: A Course for Diabetes Educators
- **Appendix 2**: Diabetes Educators' Resource Survey
- **Appendix 3**: Diabetic Patients' Attitudinal Questionnaire
- **Appendix 4**: Physicians'/Endocrinologists' Interview Guidelines
- **Appendix 5**: Evaluation of Draft Curriculum
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demographic Data</td>
<td>90</td>
</tr>
<tr>
<td>2. Formal Professional Qualifications</td>
<td>91</td>
</tr>
<tr>
<td>3. Summary of Staff Development and Inservice Programmes Undertaken by Respondents</td>
<td>91</td>
</tr>
<tr>
<td>4. Level of Satisfaction with Programme Attended</td>
<td>92</td>
</tr>
<tr>
<td>5. Role Preparation</td>
<td>94</td>
</tr>
<tr>
<td>6. Level of Clinical Responsibility</td>
<td>94</td>
</tr>
<tr>
<td>7. Resources Available to Facilitate Work of Diabetes Educators</td>
<td>96</td>
</tr>
<tr>
<td>8. Teaching Aids Used</td>
<td>97</td>
</tr>
<tr>
<td>9. Teaching Activities Used</td>
<td>98</td>
</tr>
<tr>
<td>10. Goal Setting Practices</td>
<td>98</td>
</tr>
<tr>
<td>11. Evaluation of Patient Education</td>
<td>99</td>
</tr>
<tr>
<td>12. Evaluation of Outcomes</td>
<td>100</td>
</tr>
<tr>
<td>13. Topics Identified by Respondents As Desirable for Further Study</td>
<td>102</td>
</tr>
<tr>
<td>14. Role Descriptions for Diabetes Educators</td>
<td>120</td>
</tr>
<tr>
<td>15. Competencies for Diabetes Educators</td>
<td>121</td>
</tr>
</tbody>
</table>

LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Structure of the Thesis</td>
<td>4</td>
</tr>
<tr>
<td>2. Continuum of Curriculum Models</td>
<td>9</td>
</tr>
<tr>
<td>3. Content Selection Continuum</td>
<td>14</td>
</tr>
<tr>
<td>4. A Curriculum Building Model for Diabetes Educators</td>
<td>140</td>
</tr>
</tbody>
</table>
INTRODUCTION

INTRODUCTION
AIMS OF THIS STUDY
RESEARCH QUESTIONS
ORGANISATION OF THE THESIS
INTRODUCTION

Diabetes mellitus is a chronic disease for which there is currently no cure. The main objectives of treatment are to control the onset of complications, which almost invariably develop, and to decrease morbidity, mortality and hospitalisation. Therapy comprises a combination of diet, exercise and in some cases medication, underpinned by a sound foundation of patient education.

The increased emphasis on patient education in the management of diabetes is arguably one of the most significant advances in diabetes management over the last decade. The function of diabetes education is to help patients apply skills and knowledge to assume a role in the management of their disease. The effectiveness of education is a crucial factor in controlling complications and enhancing quality of life.

Diabetes educators are health professionals with diverse backgrounds, working in a variety of settings with a variable level of support. At the time of writing, any health professional can assume the role of diabetes educator without training in either diabetes or education. Short courses focusing in the pathophysiology and management of the disease are offered at various locations throughout Australia. Attendance at these courses however, is not compulsory. The courses are from one to seven weeks duration and the limitations imposed by time restrict course content to material necessary for immediate clinical service demands.

Diabetes educators recognise that professional preparation contributes to the demonstrated level of skills and the services provided to patients with diabetes. Improving educational opportunities for diabetes educators is a priority for the Australian Diabetes Educators Association (A.D.E.A). Diabetes educators are also seeking recognition as a health speciality. A.D.E.A. also recognises that in the absence of a
specific knowledge base and an extensive theoretical preparation these aspirations cannot be achieved.

This study was undertaken to address the educational needs and professional recognition of diabetes educators and, in doing so, to improve the services offered to patients.

AIMS OF THIS STUDY

The aims of this study are:

1. To identify educational needs of diabetes educators.
2. To identify the professional competencies of diabetes educators.
3. To design a programme of study for diabetes educators based on a needs analysis.
4. To evaluate that programme in terms of its acceptability and feasibility.

The Study

Research relating to diabetes educators tends to identify problems with their practice and suggest means of overcoming weaknesses. However, information about the characteristics and special skills of diabetes educators is not readily available. While one may entertain ideas about diabetes educators' skills, these ideas need to be validated or rejected by empirical study. Needs cannot be identified, nor amelioration strategies designed, without this information. As a foundation to future planning and development in diabetes educator training, this study seeks to answer the following:
RESEARCH QUESTIONS

1. What categories of health professionals are actively involved in the education of diabetic patients?
2. How are they qualified to be diabetes educators?
3. What resources do they have available to facilitate their work?
4. Do diabetes educators incorporate principles of teaching and learning into their programmes?
5. How effective are educators in their efforts to educate diabetic patients?
6. What information and skills do diabetes educators need to become more effective?
7. What format do diabetes educators prefer for new programmes of professional education?
8. What type of qualification/recognition would diabetes educators like to obtain upon completion of the programme?
9. Can a curriculum be designed which meets identified needs, is professionally acceptable and educationally feasible?

ORGANISATION OF THE THESIS

The organisation of this thesis follows a curriculum development model. Section A addresses curriculum theory providing an overview of curriculum design. The context of diabetes education is examined in Section B. Factors within the clinical, professional and political, and educational context that influence the education of health care professionals are presented. The professional competencies of diabetes educators are presented in Section C, together with results of the needs assessment. The theoretical foundations of diabetes education are examined in section D. From this information the content and process of a curriculum for diabetes educators is defined. Evaluation theory and results of evaluation of the draft curriculum are presented in Section E, followed by the conclusion and recommendations. The curriculum, which was the product of this study,
is presented in Appendix 1. This curriculum was developed from the draft curriculum following analysis of the results from the evaluation survey.
SECTION A

OVERVIEW OF CURRICULUM DESIGN
CHAPTER 1

CURRICULUM DESIGN

INTRODUCTION
CURRICULUM THEORIES AND MODELS
CONTEXT OF A CURRICULUM
NEEDS ASSESSMENT
DEFINITION OF CORE COMPETENCIES
DETERMINING CONTENT, STRUCTURE AND SCOPE
CURRICULUM PROCESS AND RESOURCES
  - Andragogy
  - Pedagogy
  - Process Learning
  - Distance Learning
  - Competence-based Learning
EVALUATION
SUMMARY
INTRODUCTION

Although curriculum planning has been described as "a trial and error process but with action based in research" (Hunkins, 1980, p15), a well designed curriculum does not occur by accident. Curriculum decisions are founded upon systematic analysis of learners and the learning milieu. This chapter provides an overview of the factors which influence curriculum design.

A variety of curriculum theories and models have been developed in an attempt to provide clarity, direction and a focus to the teaching-learning process. These blueprints provide a framework to curriculum developers indicating where to start, how to proceed and what to evaluate to assess the success of the endeavour.

CURRICULUM THEORIES AND MODELS

Decisions about the most appropriate curriculum theory and model for the job at hand should be based, according to Marsh and Stafford (1984, p.217), upon answers to the following questions:

- Why should we teach this rather than that?
- Who should have access to what knowledge? and
- How should the various parts of the curriculum be interrelated in order to create a coherent whole?

The transfer of skills and knowledge between individuals takes place within an environment planned, created and controlled, implicitly or explicitly, by a theoretical underpinning.

Theories

Print (1987) identifies three categories of sources for curriculum theories; 1) studies of learners and learning theory (psychology); 2) studies of life (sociology); and
3) studies of the nature and value of knowledge (philosophy). The interpretation of these theories by curriculum developers provides the philosophical assumptions or the foundations of a curriculum.

Marsh and Stafford (1984) have selected four philosophies of curriculum theory and analyse examples of each. References to the authors quoted below are given in their 1984 paper.

Theories based upon the processing of information have been developed by Taba, Bruner, Ausubel, Suchman, Piaget, Hirst and Schwab. These theories focus on the intellectual growth of learners emphasising either problem-solving skills or deriving concepts and information from established academic disciplines.

Rogers and Schutz are examples of theorists concerned predominantly with providing learning experiences that will allow and encourage learners in self development.

Dewey and Thelen are examples of theorists whose curricula reflect society. The content and process emphasises the value of social relations, with a plurality of values from utopia to radical, and developing interpersonal relationships.

Operant conditioning (Skinner), classical conditioning (Pavlov), contingency management (Wolfe), stress reduction and assertiveness training, are used as the basis of a group of curriculum theories classified as Behaviourism.

The curriculum developed in this thesis is based predominantly on elements of the first two groups of theories.
Although a philosophy provides the assumptions about learning, a philosophy per se has little structure. Models provide the framework to translate a philosophy into learning experiences.

**Models**

Curriculum models are detailed perspectives of particular aspects of curricula and as such can be used to guide curriculum development. The model, often referred to as the conceptual framework, provides the link between the philosophy (what we believe) and the theoretical adaptation of these beliefs which is demonstrated by the selection and arrangement of content.

A curriculum model must support content and a number of issues have to be resolved in the process of translating a theory into a working document. Beauchamp (1975) refers to models as sub-theories to facilitate application of a theory.

For ease of interpretation Print (1987) arranged the models into a continuum from the rational/objective model at one end, to the cyclical models mid way and the dynamic/interaction models at the other (Figure 2).

<table>
<thead>
<tr>
<th>Rational/objectives models</th>
<th>Cyclical models</th>
<th>Dynamic/interaction models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tyler</td>
<td>Wheeler</td>
<td>Walker</td>
</tr>
<tr>
<td>Taba</td>
<td>Nicholls</td>
<td>Skilbeck</td>
</tr>
</tbody>
</table>

**Figure 2. Continuum Of Curriculum Models**

(Print, 1987, p.21)
The Rational/Objective models emphasise the fixed sequence of curriculum. Tyler argued that it is imperative to have clearly defined purposes (objectives) when developing curricula. Cyclical models are extensions of the rational/objectives models but, unlike the rational models, are continually changing as new information and practices become available. Dynamic models are said to reflect the true dynamic nature of learning and in so doing, the needs of learners. Elements from each of these styles are reflected in models referred to as eclectic (Print, 1987). An eclectic model was chosen for this curriculum development. Curriculum developers integrate elements into a model which is considered appropriate for the situation at hand.

Models also provide a detailed mechanism for examining perspectives on particular aspects of the curriculum-in-action, for example, evaluation models, change models or planning models (Marsh & Stafford, 1984).

While selection of a curriculum theory and model reflects individual experiences and preferences, development of these into a curriculum document requires a systematic approach with objective analysis of information at each step. Curriculum developers must take into consideration factors relating to the context within which the curriculum will be implemented, the needs of learners, the content and how this can be developed and sequenced, how the curriculum can best be implemented, and the method of evaluation. Each of these factors in relation to diabetes education is examined in detail in the following sections.

CONTEXT OF A CURRICULUM

Values influence the design of a curriculum in a number of ways. For example, what is important to the diabetes educators, their patients, and society must all be determined, considered and addressed by curriculum design decisions. These decisions will be based upon analysis of the clinical, professional and political and educational
context. The setting in which educational innovations are to be introduced cannot be ignored.

The design and content of a curriculum is influenced substantially by the nature of the society it is intended to serve. Curriculum developers translate traditional assumptions, ideas, values, knowledge and attitudes into their work. These social and cultural influences, which may be consciously or unconsciously transferred, are most evident through the content and therefore, impact significantly upon education (Print, 1987).

Education consists of the totality of learning experiences encompassing both planned and unplanned learning experiences. These experiences have become known as the 'hidden curriculum'. Significant influence is exerted by the hidden curriculum, described by Print as:

... the outcomes of education and/or the processes leading to those outcomes, which are not explicitly intended by educators. These outcomes are generally not explicitly intended because they are not stated by teachers in their oral or written lists of objectives, nor are they included in educational statements of intent ... (1987, p5)

Values and attitudes are commonly passed on in this way. While the hidden curriculum can be interpreted as positive or negative depending upon one's values, one danger is the tendency to perpetuate social control in the form of stereotypes and ideology. For example, historically, formal education curricula were separated into those that provided training and those that provided an academic grounding (Kelly, 1980). This distinction influences the allocation of resources, the structural setting, ideology and curriculum dimensions and determines the ultimate structure of society.

Curriculum as a mirror for society or a mechanism for change reflects the desire to either retain or revoke the status quo identified by a situational analysis.
The procedure for a situational analysis has been described in four steps:

1) Identify problems in context.
2) Select appropriate factors.
3) Data collection and analysis.
4) Make recommendations (Print, 1987, p85).

One method of collecting information for a situational analysis is to undertake a needs assessment.

NEEDS ASSESSMENT

Described as diagnosis of needs by Taba (1962), a needs assessment is a general analysis of problems, conditions and difficulties that could impinge upon the successful implementation of a curriculum.

The purpose of a needs assessment is to collect information about local factors, and, in doing so, to provide a foundation for a curriculum that is aimed at meeting student needs. From a needs assessment, educational priorities are determined and curriculum objectives developed.

The scope and emphasis of the needs assessment depend upon the nature of the curriculum. The data for analysis may come from a variety of sources, utilizing different techniques of collection. Records provide information, sociometric data helps describe the context, and open-ended questions can be analysed for concepts, meanings and feelings. This step of curriculum development is often, and unwisely, overlooked.

DEFINITION OF CORE COMPETENCIES

With the emergence of each health care speciality, decisions about the minimum acceptable knowledge, attitudes and skills for practitioners have to be made. Diabetes
educators, being a relatively new speciality group still have to resolve these problems, bearing in mind that 'minimum acceptable' in the health sciences should imply a high standard that is rigorously maintained.

Spivey (1971, p269) developed a technique to determine curriculum content for a medical speciality predicated on the idea that:

...conceiving a minimum acceptable performance is difficult unless performance is explicitly defined in behavioural terms

in the belief that:

... a list of expectations for student performance should be composed of complete educational objectives.

In that curriculum development exercise content was to be determined by analysing and delineating the function of health professionals, in that case ophthalmologists, in terms of terminal behaviours. Individuals representing multiple backgrounds and viewpoints, in addition to teachers of the discipline, were consulted to determine content. Conclusions drawn from compilation of perceptions are reasonably subject to scrutiny, however in this instance, it was reported that results gave a clear, quantitative indication of a minimum acceptable performance in ophthalmology for medical students.

Following this successful approach to determining curriculum content, the clinical competencies identified by A.D.E.A. and discussed in Chapter 5, and the results of the survey reported in Chapter 11, provide the foundation for curriculum development in this project.
DETERMINING CONTENT, STRUCTURE AND SCOPE

The content, structure and scope of a curriculum cannot be considered without taking into account the context of the curriculum, the needs of learners and theoretical foundations of the discipline. Content consists of more than knowledge, facts, concepts, and generalisations. In addition to knowledge, content includes processes and values associated with what is being learned. What is included and excluded from curriculum content is influenced among other things, by the preferences of curriculum developers, the knowledge explosion, and increasing standards of literacy (Taba, 1962).

The stance taken on what content to include is measured along a continuum emphasising subject at one end and a process approach, valuing skills, at the other (Print, 1987). Figure 3 illustrates the content selection continuum.

```
Subject Approach   Process Approach

(Intrinsic value of content)   (Content is irrelevant)
```

Figure 3. Content Selection Continuum

(Print, 1987, p109)

The subject approach emphasises content accepting that valued content comes from knowledge, skills and values accumulated over time and expressed as an academic principle. Process learning focuses upon assisting the learner to meet educational goals.
Content has to be organised into a meaningful pattern and another task of the curriculum developer is to determine the order and scope of content. Decisions about the sequence of content have to be made. Appropriate sequencing takes into account the characteristic behaviours, history and traditions, and methods of problem solving of the discipline. These factors will help determine:

1) What criteria should determine the order of content?
2) What should follow what, and why?
3) When should learners acquire certain content?
(Print, 1987, p117)

Content may be sequenced according to one of six principles; simple to complex, prerequisite learning, chronology, whole to part learning, increasing abstraction and spiral sequencing (Print, 1987).

The scope of a curriculum directs the depth and range of content areas. Few educational principles provide guidance when making decisions about the scope of content to include within a curriculum. Print (1987, p115) suggests the application of the following questions to define scope:

1) How much of each content area should students study at any one time?
2) Is there a body of common content that all students should know?
3) If one supports the notion of a core plus electives approach to content, what should be the role of elective content?
4) What content should be excluded from the curriculum.

CURRICULUM PROCESS AND RESOURCES

Learning activities are integrally related to content and curriculum intent, with curriculum developers seeking the most appropriate methods of imparting knowledge to students. The selection of teaching processes and resources is determined by the needs of learners and the stated curriculum intent which, in turn, are influenced by past successful, and unsuccessful, experiences of learners and teachers.
Numerous teaching strategies are available to facilitate student learning. Variety in the teaching situation is important and teachers require an effective repertoire of teaching/learning strategies because:

1) Not all students learn equally well through the same strategies.
2) Certain methods are more applicable to particular situations.
3) No single method is superior, particularly in terms of student performance, to another in all situations (Print, 1987, p.126)

The principle groupings of teaching-learning strategies are:

1) Expository teaching: didactic transfer of knowledge from teacher to learner.
2) Interactive teaching: the teacher makes a deliberate effort to encourage interactions with the learner.
3) Small group teaching: small groups within the class work relatively independently to achieve a goal.
5) Individualisation: the pace and level of learning proceeds according to the ability of individual learners.

In addition to these teaching-learning strategies, a variety of philosophies direct the emphasis of teaching and learning. In addition to learning theory, process learning and distance learning are reflected in this curriculum for diabetes educators.
According to Knowles (1983), andragogy is premised on at least four crucial assumptions about the characteristics of adult learners that are different from the assumptions about child learners. As a person matures:

1. his self-concept moves from one of being a dependent personality toward one of being a self-directing human being;
2. he accumulates a growing reservoir of experience that becomes an increasing resource for learning;
3. his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles; and
4. his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness to one of problem-centeredness. (p55)

Within the adult world self-concept is encouraged and reinforced. An environment conducive to successful diabetes education for adult patients is one in which the learner sees himself as self-directing, as opposed to a dependent personality. Within such an environment he/she accumulates experiences, (skills and knowledge) which he/she can call upon to solve problems with the management of his/her disease. The information most relevant to the learner, and therefore most likely to be retained, is that which is required to answer issues deemed important at the time, and information necessary to retain social roles (Knowles, 1983).

These assumptions about adult learners have implications for their teachers who must make programme decisions based upon what they know about the learners. Decisions concerning the learning environment, diagnosing needs and setting priorities, designing programmes, teaching techniques and strategies and evaluating learning are based upon what is known about the characteristics of adult learners.
Children as learners (pedagogy)

For children maturation is a process of learning. The normal role of a child is that of learner. Learning for children is akin to paid employment for adults, and as is the case with adults, their occupation is a major source of reward and self-fulfilment. Obvious individual differences such as age, sex, intelligence, and previous achievement impact upon the techniques used and the content selected for inclusion in programmes for children with diabetes.

Diabetes imposes a variety of life-style changes which at times will interfere, or be in conflict, with cultural norms, expectations and value frameworks. An effective patient educator responds to the learning milieu, assessing the suitability of learning experiences, resources and current information and selecting the most appropriate combination of learning experiences for each patient, demonstrating awareness of the implications of chronic disease in social, cultural and personal terms.

Process Learning

Process learning is described as the "implicit goals" of education; changing the focus from curriculum to learner. The objectives of process learning, namely;

1) possessing, or being able to locate, the relevant information;
2) applying highly generalizable skills and operations;
3) general strategies of problem solving;
4) setting one's own objectives;
5) evaluating the products of learning;
6) motivation, and
7) possessing an appropriate self-concept.

Process learning is an appropriate component of a model upon which to base educational programmes for both diabetes educators and their patients (Biggs, 1973). Both educators and patients must be capable of locating their own resources.
Within patient education the priorities are communication, understanding and synthesis of knowledge rather than learning controlled by objectives. This is particularly relevant when the learners are adults. Process learning also reflects elements of adult learning theory (Knowles, 1983).

**Distance Learning**

Houle (1977) points out that distance learning permits a flexible and economic response to changing educational needs that is well suited to the variety of learning technologies developed over recent years.

Distance learning also permits students to study at their own pace, an advantage for students from varying educational backgrounds (Chang, Crombag, van der Drift & Moonen, 1983). Another major advantage with this technique is that learning can take place at the point of application with written assessment structured to encourage students to draw upon their individual work experiences thereby integrating learning experiences into daily work routine where appropriate.

An obvious disadvantage of distance education is the curtailment of face-to-face teaching and a certain degree of isolation with fewer opportunities for contact with teachers and other students (Houle, 1977).

Nevertheless, distance education is especially suited to diabetes educators who, being widely distributed throughout Australia, are not able, or willing, to enrol in courses on campus that require fixed times and places of study. Further, students are permitted to study at their own pace, an advantage for students from varying educational backgrounds.
**Competence-based learning**

Diabetes educators are required to be competent practitioners. Acquisition of knowledge alone does not indicate the efficacy of an educator. Health professionals are required to demonstrate they are able to meet the needs of their patients utilizing knowledge as a basis of their practice. Competence-based education involves a statement of learner outcomes (competencies) and the criteria to be employed for evaluation. Learners from diverse professional backgrounds with varying levels of clinical expertise are responsible for selecting the information they require to achieve stated competencies.

These competencies and criteria are used by students to direct their learning and as the foundation for assessment. The learning process is flexible and self-directed. Students are encouraged to seek structured and unstructured settings, combining past and current learning to meet assessment criteria.

Assuming the philosophy of accountability, flexibility, individualisation and learner responsibility, competence-based learning adapts well to both adult education and distance learning.

Competence-based education is a familiar basis for curricula for health professionals. Prior to the transfer of nurse education to tertiary institutions, training schools for nurses had utilized educational models such as mastery learning for some time, while in South Australia, post-basic education for nurses has adopted competence-based education (South Australian Health Commission, 1988). This model, adapted by Benner (1984) to describe development of skills and expertise by nurses, moves practitioners through five functional levels from novice to expert as post basic education is undertaken. Adopting the premise that experience is knowledge, Benner identifies five levels of proficiency in nursing practice namely, novice, advanced beginner, competent, proficiency and expert.
For any programme of study to be a successful mechanism for unifying professional preparation and satisfying minimum criteria for practice, decisions must be made about the nature of competencies and the level of achievement graduates must possess before they can enter the workforce. The meaning of competence is, however arbitrary. Competence can describe a practitioner who is adequate, able, effectual, capable, qualified or all of these. To move from this ambiguous state to a clearly articulated programme of professional education, requires clear specification of the competencies learners must demonstrate as well as the criteria against which the cognitive components, psychomotor skills and the effectiveness and accountability of the product can be measured (Grant, 1979).

The competence-based philosophy requires that academic goals be stated as explicit competencies and that broad objectives be broken down into measurable units, focusing on the students' performance of specific skills.

The content of programmes must be designed and developed with learning experiences and opportunities directed toward learners with minimum expected levels of experiences, knowledge and skill. Being aware of the essential skills and knowledge required for competence, selection of appropriate learning experiences becomes the joint responsibility of the student and the teacher. Assessments are created to verify objectively all essential outcomes (Grant, 1979).

EVALUATION

Bevis (1982) describes curriculum evaluation as the future rather than the process of looking back at past events that cannot be changed. Within the context of a curriculum, evaluation serves to identify the extent to which the relationships between the philosophy, conceptual framework, objectives and content are demonstrated through achievement of desired outcomes.
Stenhouse (1986) distinguishes three types of decisions for which evaluation is used:

1) Course improvement; deciding what instructional material and methods are satisfactory and where change is needed.

2) Decisions about individuals; identifying the needs of learners for the sake of planning instruction, and acquainting the learner with his own progress and deficiencies.

3) Administrative regulation; for example, judging effectiveness and efficiency of a system or individual teachers.

A variety of processes are utilized to obtain information about course outcomes. These processes and the models used to guide the process will be examined in detail in Section E, Chapter 10, Curriculum Evaluation.

SUMMARY

This section presented an overview of the activities and forces that influence curriculum developers in their work. A systematic approach to curriculum design has been taken and the theoretical underpinnings of each component noted. This approach takes the curriculum developer through an analysis of the contextual factors impinging upon the design, a method of analysing needs and identifying core competencies. Definitions of the content, sequencing and scope of curricula have been presented as have assumptions about, and philosophies that direct, teaching and learning. The evaluation process was introduced and will be examined in greater detail later in this thesis.

This sequential curriculum development model has provided the structure for the remainder of this thesis.
CHAPTER 2

THE CLINICAL CONTEXT

INTRODUCTION
THE SIGNIFICANCE OF DIABETES
THE NATURE OF DIABETES EDUCATION
THE AIM OF PATIENT EDUCATION
OUTCOME MEASURES FOR DIABETES EDUCATION
HEALTH PROMOTION GOALS
ATTITUDES TO ILLNESS
  - The Patient Role
  - Response to Illness as a Life Crisis
  - Position on the Illness-Wellness Continuum
ROLE DELINEATION IN DIABETES CARE
SUMMARY
INTRODUCTION

The design of health care services is determined by the prevailing social, economic and political circumstances. The provision of care within the services is influenced by the clinical, professional and political and educational contexts.

This chapter examines the significance and nature of diabetes, the aim of patient education and outcome measures for diabetes education. Variables that influence health and health promotion goals including attitudes and expectations of patients and health care providers are also analysed.

THE SIGNIFICANCE OF DIABETES

Statistics released by the Australian Diabetes Society (1988) indicate that there are approximately 500,000 diagnosed diabetics in Australia and approximately 280,000 individuals with impaired glucose tolerance, 30% of whom are likely to develop frank diabetes within 10 years. The incidence of diagnosis of new diabetics in Australia has been estimated to be 42,000 per annum or four new cases each hour. The annual cost of diabetes to Australia amounts to about $1.2 billion, of which $650 million is directly attributed to hospital costs.

The USA hospitalisation rate for diabetics has been reported to be 2.4 times greater than that for nondiabetic adults and 5.3 times higher for diabetic children than for children without diabetes. Research indicates that the rate of diabetes related hospitalisations is increasing (Sinnock, 1985).

Despite the considerable advances made in the treatment of diabetes over the last 20 years, health outcomes have remained less than satisfactory, and this has provided the motivation to devise strategies for improving diabetes health care delivery. Diabetes
education contributes one facet of diabetes management and the treatment of the disease is considered incomplete without an education component.

THE NATURE OF DIABETES EDUCATION

In an attempt to minimise social and economic costs the management and education of patients with diabetes is receiving increasing attention.

The number of health professionals in Australia functioning as diabetes educators is unknown and national information on diabetic education services is incomplete. For example, the Australian Diabetes Educators Association (A.D.E.A), the professional body for diabetes educators, has recently published a resource directory, which omits some large centres and individual hospitals (A.D.E.A., 1988 [b]).

Diabetes education has been described as "the most important basis of diabetes management" (Assal & Conti, 1988, p57). Education is an intervention that can partially, if not substantially, increase the quality of life for diabetics and reduce the cost of health care (Moffitt, Fowler & Eather, 1979). The social and economic advantages of stabilizing and maintaining diabetics without hospitalisation through outpatient education has been demonstrated (Hoskins, Alford, Fowler, Bolton et al., 1985). The advantages to patients and educators of a multidisciplinary health care team, emphasising social and behavioural aspects of diabetes care are well known (World Health Organisation [WHO], 1985).

An integrated health service encompassing the primary health care sector, the education component, and hospital inpatient and outpatient services is recognised to be the most effective and efficient means of delivering quality diabetes services (Beaven, Scott & Moore, 1988; Moffitt et al., 1979). However, many physicians and other members of health-care teams do not consider patient teaching to be part of their duties
The emphasis upon a multidisciplinary health care team for diabetes management and the reluctance on the part of some health professionals to undertake patient education themselves may be an acknowledgement of the complex nature of patient education.

In spite of this reluctance, the educational role has been assumed by a variety of allied health professionals. They may be nurses, dietitians, psychologists, social workers, optometrists, podiatrists, pharmacists, dentists and those involved in rehabilitation medicine, as well as medical practitioners (Madan & Raab, 1988). These professionals, who have responsibility for planning the care and teaching given to diabetic patients, are important resources for the delivery of diabetes health care in both developed and developing countries.

Over recent years the emphases of, and approaches to, diabetes patient education have changed, due in part to an increased understanding of the complex relationship between adherence to treatment and glycaemic control (Simms & Simms, 1989). A variety of physical and psychological factors affect glycaemic control and while assessment of patient compliance is essential for the provision of therapeutic care, efforts to achieve strict control may, in some instances, be counter productive (Hayes & DiMatteo, 1989).

The process of education is also changing. New uses for the computer are beginning to emerge with software being developed that will assist both patients and health professionals in management, record keeping, education and problem-solving.

Research in the fields of psychology, human behaviour, social learning theory, and health education has improved our understanding of the problems that underlie patient's relapse from self-care regimens in chronic disease. Behavioural support designed to
maximise the strengths and mitigate the weaknesses of each patient within his social environment is receiving increasing attention.

In tandem with the changing emphasis of patient education, valued outcomes have also changed. Compliance with treatments is no longer the only outcome measured. Teaching is no longer limited to a check list of do's and don't's on the assumption that information equates with understanding, awareness, and confidence in patients' abilities to make the necessary adjustments in their lives. Effective patient education, increasingly referred to as health promotion, requires teaching-learning strategies and evaluation based upon identified needs of individuals. Coping mechanisms and health needs of patients now form the basis of patient education (Rovers, 1987).

THE AIM OF PATIENT EDUCATION

Within the framework of prevention, health educators are not only concerned with the recovery process. Their objectives include improving the efficiency of health care which is achieved in part by:

1) more accurate knowledge of patient problems, interests and attitudes;
2) improved communication between all those individuals and agencies concerned with care,
3) active participation by patients in the control of their illness (Bedworth & Bedworth, 1978).

The focus of their role is to change behaviours and provide skills and knowledge designed to optimise and maintain a level of health.

The motivation to include patient education in health care delivery programmes has come from a number of factors. An increased emphasis on disease prevention, an increased incidence of chronic disease, an aging population, consumer demand for
example, childbirth education classes, as well as demonstrated financial success of behavioural change programmes, such as fitness classes and gymnasiums, all encourage health promotion. Diabetes educators face the challenge of adapting mainstream health care emphasising cure, to a prevention/promotion orientation.

OUTCOME MEASURES FOR DIABETES EDUCATION

The management principles underlying the content of diabetes education programmes focus on nutrition and dietary compliance and medical management and compliance. Outcomes include improvement in dietary knowledge, eating habits, and, for the majority of diabetics, weight loss, and maintenance of glycosylated haemoglobin to a level comparable with nondiabetics. Evaluation of diabetes education programmes is interpreted against these indices of control.

In addition to ensuring satisfactory therapeutic outcomes and avoidance of complications, diabetes management aims increasingly to promote positive health and quality of life for diabetics and their families. This is part of a comprehensive national trend towards health promotion for the general community.

The difficulties experienced by anyone attempting to evaluate objectively patient outcomes and compare one type of education with another have been demonstrated (Graber, Christman, Alogna & Davidson, 1977). Inconsistencies amongst programmes, local health care facilities, functions of individual clinics, expertise and service backgrounds of educators, research methodologies and even the wording of the final report are reflected in results.
HEALTH PROMOTION GOALS

Health promotion strategies may be classified as primary, secondary or tertiary.

Primary prevention programmes are non-specific and geared toward raising the general level of health and well-being of individuals, families and community. Nutrition and exercise programmes designed for groups from school children to the elderly are examples of primary prevention. Obesity and lack of appropriate exercise, although preventable, are major contributing factors to non-insulin dependent diabetes (NIDD) which affects 85% of the diabetic population.

Secondary prevention emphasises early diagnosis and appropriate intervention. Screening for blood sugar levels to test for asymptomatic diabetes mellitus is an example of a community programme designed to draw attention to diabetes. Occupational health, community screening for hypertension and stress management are examples of secondary prevention.

Tertiary prevention and rehabilitation begins when the disease or condition has stabilised, the goal is to return the individual to the highest level of function possible; the goal of patient diabetes education.

As a health care strategy, health promotion is appropriate in all health settings. A variety of health care professionals assess and teach modifications of cardiac risk factors, help stroke patients plan for home environmental changes, assist renal patients with detailed nutritional plans and preparation for dialysis, and assist diabetic patients learn the skills and knowledge necessary to become active participants in the management of their disease. Strategies such as lifestyle assessment, behaviour modification and effective communication are fundamental to health promotion (Flynn and Giffin, 1984).
Health promotion benefits from the integration of self-directed and teacher-directed approaches to learning (Bell & Bell, 1983). In self-directed learning, learners participate actively in assessing their learning needs and developing their objectives. The learners also make choices about the learning environment, time of learning, pace and sequence, most appropriate experiences, resources utilized, method(s) of evaluation and method(s) documentation.

A number of models for promoting health and optimising therapeutic outcomes in diabetes have been evaluated and reported. There is no single proven best technique, although adherence to principles such as involving the patient as a partner in negotiating care appears to yield positive results. In addition, directing the emphasis of education to behaviour rather that knowledge is most effective in achieving behavioural outcomes. A review of patient education programmes is presented in Chapter 4.

ATTITUDES TO ILLNESS

Factors that are difficult to measure, but nevertheless affect the outcomes of education, are the attitudes of the learners, in this instance the attitudes of patients toward illness and their interaction with health care professionals. Health professionals and patients are, at times, equally unsure about appropriate behaviours (Bates & Linder-Pelz, 1988).

Diabetes educators must understand the implications of the individual’s role as patient, their response to the life crisis of illness and self-perceived position on the continuum from illness to wellness. Each of these factors is examined below.
The Patient Role

Within our society considerable authority has been given to the medical profession to define illness and health. Doctors were given the role of deciding when people needed medical treatment and what behaviours could be expected of sick people. The sick role presented by Talcott Parsons, describes the expected behaviour of the patient. The sick role implies two obligations and two exemptions:

1) individuals are exempted from their normal obligations.
2) They are not responsible for their condition and are unable to overcome the condition unaided.
3) They are expected to seek help.
4) Illness is an undesirable condition and the patient must get well (Schwartz & Kart, 1978, p2).

Clearly, this definition of illness behaviour is inappropriate in chronic diseases, however, no alternative role models have been formulated for the management of chronic conditions.

Three basic models of doctor-patient relationship have been described by Szasz and Hollender (1978) to define the roles and obligations associated with this relationship.

The Model of Activity - Passivity

This form of doctor/patient relationship implies an authoritative expert and a compliant, passive recipient. "Modern medicine" requires the doctor to assume the active role by prescribing medications, undertaking complex diagnostic procedures, or performing surgery; the patient is the passive recipient. "Treatment takes place irrespective of the patients' contribution and regardless of the outcome" (Szasz & Hollender, 1978, p101). This model, with its origins in emergency care, is likened to the parent-infant model and is inappropriate for ongoing diabetes management which
requires considerable active patient involvement.

The Model of Guidance-Co-operation

This is the model usually evident in acute illness where it is acknowledged that patients, although expected to be co-operative and compliant, do have feelings and aspirations of their own. Szasz and Hollender point out that "the main difference between the two participants pertains to power and to its actual or potential use" (1978, p102).

The patient remains in a submissive position, expected to "look-up to" and to "obey" the doctor, and to accept treatments, which are for his own good, without question, argument or disagreement.

The Model of Mutual Participation

For both philosophical and psychological reasons, this is identified as the model of choice for circumstances in which the patient is expected to assume an active role (Szasz & Hollender 1978, p102). In this type of relationship the participants:

(1) have approximately equal power;
(2) are mutually interdependent;
(3) engage in activity that in some way will be satisfying to both.

This model is most appropriate for patients wanting to take care of themselves, when patients need to cope on a daily basis with management of chronic disease alongside their expert-directed treatment, or when the treatment or prevention programme is essentially carried out by individuals other than experts. This model requires more complex social and psychological skills.

Because diabetics must assume a high level of responsibility for their own clinical management, this is the model of choice for patients with diabetes and their physicians
and educators. The position of the patient as the controller and leader of his management has been addressed by Berger (1987) who believes patient education is a necessary precursor to many treatment modalities, the success of which ultimately dependent upon effective patient education. Creation of conditions that facilitate effective patient education outcomes is a function of diabetes educators.

Holistic medicine requires the active participation of the person whose health in involved. The healer functions as a diagnostic consultant and educator. The task before us is to made it more attractive for people to follow healthful practices and less rewarding to choose unhealthful behaviour (Grasser & Craft, 1984, p.208).

In order to design effective training programmes it is necessary to recognise not just the clinical requirements of patients but also the needs which may arise from the context of their clinical care. Contextual aspects which are vital to the success of diabetes education include patient/practitioner interactions and attitudes, health care delivery systems and definition of professional roles.

Response to Illness as a Life Crisis

Throughout the life span, man encounters a series of potentially dangerous situations. Which of these events will be interpretation as a crisis vary between individuals according to their physical and emotional makeup as will their methods of adaption. Previous applications of crisis theory to adaption to illness have demonstrated this to be a useful framework for assessing the mental health status of patients and planning for amelioration (Infante, 1982).

Receiving a diagnosis of diabetes represents a crisis for the patient and family. Fear and anxiety, loss of coping mechanisms, altered body image, altered roles, disruption of dynamic equilibrium, and maladaption manifest to varying degrees. The onset of diabetes mellitus constitutes a loss of body functioning that had formerly existed and sets up an
entirely new mode of functioning for the individual.

The basic assumption of crisis theory is that events or occurrences perceived to be hazardous to an individual will stimulate adaptive behaviours that he has successfully used in the past. If these mechanisms are successful, a crisis will be averted. However, should these coping mechanisms, or body defences fail, a reaction, or period of upset, will follow. As a response to the crisis, new behaviours and coping methods will be developed which, if successful, result in resolution to a steady state.

Three major ways of helping patients to understand a crisis and develop coping mechanisms are identified by Porrit (1984). These interventions are based upon psychoanalytic theory, behaviourism, and the interaction model based upon systems theory.

**Position on the illness-wellness continuum**

Attitudes to illness also influence the position of an individual along the health-illness continuum from death to optimum wellness. Health is not a static state and the level of health achieved or ill health experienced by an individual is dependent upon a series of intrinsic (originating from within the individual) and extrinsic (environmental factors) (Infante, 1982).

The purpose and objective of diabetes education is to assist a diabetic patient and his family to achieve and maintain optimal potential along the health-illness continuum. To achieve this goal, diabetes educators need to select the most suitable education intervention for each patient being cognizant of the patient's potential to obtain and maintain management objectives.
ROLE DELINEATION IN DIABETES CARE

Patients have expectations not only about their own roles when ill, they also have expectations about the roles of members of the health care team. The beliefs a patient has about the functions of each team member will, in some way, reflect his sick role beliefs and his own interpretation of his responsibilities at this time. Likewise, each member of the health care team has beliefs about his or her role in patient education, and feelings about his or her performance as a patient educator. The effects of these beliefs have been explored in a number of studies. Patients perceive education to be the role of the doctor (Tilley, Gregory & Thiessen, 1987) although doctors perceive education to be the role of the nurse (Assal & Conti, 1988). Nurses, however, are not clear about their role in patient education, their knowledge of diabetes or their ability to teach patients (Weinzeirl, 1983). Although the diabetes educator's role has been documented in the literature, (Dudley, 1980; Slaytor, 1987) once in the role many health professionals feel poorly prepared for this function (Cook & Cohen, 1986), often lacking the basic skills required by patient educators (Lorenz, 1986; 1987; 1989) and/or adequate support (Essig & Thielen, 1982; Pigg, 1982). They are also unsure about their patient teaching responsibilities relative to other members of the health care team, and about the content they can and should teach (Essig & Thielen, 1982; Heller & Brown, 1983; Tilley et al., 1987).

Failure of either party to exhibit appropriate role behaviour can result in conflict, a natural consequence of confusion over roles and responsibilities.

Knowledge about the disease state alone is not sufficient to change health behaviours; consideration must be given to knowledge and attitudes at the 'lifestyle level' (Coulon, Maddock, Warren, 1985).
One view of patient education is confined to acquisition of knowledge which is assumed to lead to desirable changes in behaviour. Viewed from another perspective patient education is any interaction between health professionals and health consumers that provides the opportunity for therapeutic communications. Behaviour change is often intended, however, it is not always easy to obtain (Redman, 1988). Even a perfect test score does not equal patient education if it is not accompanied by life-style changes (Corlette, 1988).

SUMMARY

Diabetes mellitus places significant strain upon social and economic resources. In an attempt to optimise the effect of medical management education has become an integral component of diabetes care. However, while education may appear to be a relatively economical intervention, a number of influences impinge upon successful patient outcomes. Curricula for diabetes educators must take account of those influences and ensure that educators are familiar with and can address these.

Outcome measures must be selected that meet the abilities and expectations of patients while reflecting health promotion goals. Appropriate outcomes will be influenced by attitudes of patients towards illness and also by the members of the health care team.
CHAPTER 3

THE PROFESSIONAL AND POLITICAL CONTEXT

INTRODUCTION

THE ROLE AND RESPONSIBILITIES OF DIABETES EDUCATORS

DIABETES EDUCATORS IN AUSTRALIA
  - The History
  - ADEA's Goals
  - Accreditation of Diabetes Educators
  - Ongoing Recognition

THE INTERNATIONAL CONTEXT
  - Quality Assurance for Diabetes Patient Education

DIABETES EDUCATORS AS A PROFESSIONAL GROUP
  - Socialisation for Professional Practice
  - Identifying a Profession
  - Professionalising Diabetes Educators
  - Professional Relationships

SUMMARY
INTRODUCTION

In health care there is a close association between professional and political factors and the position of professional groups relative to medical practitioners who continue to dominate the health care hierarchy (Willis, 1983). These factors are reflected in the method of professional preparation and subsequent practice privileges of each group. In this chapter, the role and responsibilities of diabetes educators are addressed, and an historical overview of diabetes education in Australia presented. Australian Diabetes Educators' Association (A.D.E.A.) goals and strategies for professional development of diabetes educators are outlined, international practices reviewed, and issues influencing diabetes educators as a professional group examined.

THE ROLE AND RESPONSIBILITIES OF DIABETES EDUCATORS

A.D.E.A. define a diabetes educator as:

... a health professional who forms an integral component of a diabetes education team. In addition to giving advice according to his/her specialist area of training, the diabetes educator must be able to deal with general considerations of diabetes care and education, if the team approach is to be successful (1987, p6).

The process of diabetes education has been described by Assal & Conti.

Diabetes education obviously means that the members of the health-care team should be taught (if necessary) about diabetes, but also that they should be educated on how, what and why to teach diabetic patients; at the same time it means that the patient should be educated by the team, though in a constant feedback, the patient will teach the members of the team what his or her actual needs are (1988 p.57).

The major objective of diabetes education is to communicate diabetes health education to the patient, family, and community. The role of a diabetes educator is, therefore, to improve the quality of patient education through assessing the patient's readiness to learn, needs and knowledge, by providing patient education, anticipating individuals' future problems, and evaluating progress (Dudley, 1980).
DIABETES EDUCATORS IN AUSTRALIA

The History

A.D.E.A. was formed in 1980 to bring together health professionals performing the role of diabetes educator.

Training courses for health professionals performing the functions of a diabetes educator began in 1981 at Diabetes Education Centres in Melbourne and Newcastle. The early courses were rather haphazard experiences without formalised curricula. Participants joined patient education groups and shared experiences with each other and group leaders. Later courses became more formalised with participants in small groups receiving instruction for two or three days. The focus was on the disease process.

In 1983 the Lions International Diabetes Institute in Melbourne formalised professional education into a 5-day "Diabetes Training Course for Health Professionals" (Cohen, 1988). Nurses, dietitians, podiatrists, pharmacists, and physiotherapists attended these courses to extend their knowledge and skills in the areas of diabetes and teaching. The programme consisted of a core curriculum providing an overview of the medical, psychosocial, and educational aspects of diabetes care expanded by electives focusing this knowledge and allowing study of a wide range of specialised areas. Contraception and pregnancy, the elderly, nutrition, audiovisual techniques, computers, inpatient and ambulatory stabilization, introduction to teaching skills and programme planning are examples of electives offered. Generally two to three hours were allocated to each elective (Cohen, 1988).

The Royal North Shore Hospital, Sydney, continues to offer a comprehensive two week course for Diabetes Educators. Participants take part in sessions designed to provide knowledge and skills in the pathophysiology and medical management of
diabetes, teaching skills, and research. Since introduction of the National Educators' Course by A.D.E.A. in January 1989, this course is no longer accredited by A.D.E.A. The National Educators' Course is discussed in detail later in this chapter.

Recognising that there are shortcomings in diabetes education in Australia, the Australian Diabetes Foundation (ADF) convened a Search Conference during May 1987 (Australian Diabetes Foundation, 1987). The conference, involving diabetic patients, health professionals and a number of groups involved in health care and promotion, including A.D.E.A., represented an attempt to increase the efficiency and effectiveness of diabetes education and care in Australia.

The importance of diabetes care was reinforced, and the role, function and future needs of those professionals who assume, or in some instances are allocated, the position of diabetes educator were addressed. The conference recognised that there is a growing number of enthusiastic and skilled health care providers making positive contributions to improving the quality of life for diabetics. But at the same time, conference participants focused on a number of areas in diabetes education requiring improvement.

Attention was drawn to inadequate preparation of health care providers in the area of diabetes care. For example, poor knowledge and management by general practitioners and hospital nursing staff, a lack of adequate counselling, a lack of encouragement of patients to assume self-help/self-care, a lack of emphasis on non-insulin dependent diabetes, failure to evaluate care at all levels, and a lack of specific training for health professionals were identified by conference delegates as needing attention.

Recommendations from the conference included the establishment of a task force to develop standards of diabetes care, review undergraduate and post graduate curricula for health professionals, and encourage and facilitate on-going education.
A.D.E.A.'s Goals

At the time of the Search Conference A.D.E.A. was addressing the issue of professional development of diabetes educators and quality assurance to monitor their practice. The key strategies are the development of a curriculum that is known as The National Educators' Course, and the instigation of a system of accreditation for diabetes educators (Australian Diabetes Educators Association (A.D.E.A.), Certification Sub-Committee, 1988, 1986). Introduction of a quality assurance programme is also planned (A.D.E.A. Quality Assurance Sub-Committee, 1989).

The National Educators' Course was officially launched in January 1989 to supersede all courses previously accredited by A.D.E.A (A.D.E.A. Curriculum Document, 1987, A.D.E.A. Certification Sub-Committee, 1988). This programme is a seven week course which can also be offered as three two week modules (the seventh week of evaluation and assessment is integrated throughout the two week modules). The course provides for three weeks theory, three weeks practical experience, and one week of evaluation and assessment. Participating centres must offer, and diabetes educators must complete, the three modules within a maximum of three years.

To date the course has been run at the Westmead Hospital, and individual modules have been offered by other centres around New South Wales and South Australia.

Each module, containing elements of biological sciences, behavioural sciences and teaching techniques and strategies, comprises a theoretical and a clinical component. Clinical experiences are gained in group education programmes, individual consultations and inpatient education. Assessment consists of examinations and written and practical assignments. Centres offering this course are also expected to provide course graduates with ongoing support; the requirements and nature of which is unspecified.
This course, being restricted to 7 weeks, is primarily content oriented. Participants are provided with answers to their immediate problems and needs. While this course represents an improvement over the previous courses, it does have limitations arising from the fact that it provides little opportunity for reflecting on the process of patient education.

Through a role description, competencies and accreditation mechanism, (A.D.E.A. Newsletter, No.21, 1988) A.D.E.A. is attempting to enlighten both administrators and practitioners to the complexities of diabetes education and discourage a cavalier approach to appointment of diabetes educators. Future consideration will also need to be given to the role of diabetes educators in policy development relating to social and community issues relevant to the needs of people with diabetes.

The policies developed by A.D.E.A. at this time, if representing sufficient vision, thoughtfully planned and timely in execution, could be the infrastructure that will provide the bases for achieving these goals. The policies need to be extensive enough to accommodate diabetes educators in future; those who will be operating under an expanded model of diabetes education.

**Accreditation of Diabetes Educators**

In 1985 the membership of A.D.E.A. voted to form an Accreditation Sub-Committee whose function it would be to develop a blueprint for 'Recognition of Diabetes Educators' by A.D.E.A. The terms of reference were to address:

1. Recognition of individual diabetes educators,
2. Launching of a National Educators' Course,
The result was a six stage plan.

Stage 1  -  Implement a "Grandfather Clause" for diabetes educators.

Stage 2 - Establish a Certification Sub-Committee to develop a national curriculum, develop a formal assessment procedure and approve programmes, wholly or in part, which conform with the curriculum.

Stage 3 - Establish criteria for recognition of diabetes educators not qualifying under the "Grandfather Clause" for Accreditation.

Stage 4 - Develop an ongoing assessment procedure.

Stage 5 - Seek affiliation with a tertiary institution, and

Stage 6 - Focus on professional recognition of diabetes educators as a unique group of health professionals.


Accreditation by A.D.E.A. can be sought through several avenues. A number of diabetes educators qualified for accreditation under the Grandfather Clause. To qualify under this clause, applicants were required to supply:-

1. Evidence of having undertaken at least two years full time or four years part time work experience as a diabetes educator prior to 1st August, 1986.

2. Evidence of continuing interest, commitment and contribution to the field of diabetes education as documented in
   a) curriculum vitae
   b) report of one or more references [sic].


Diabetes educators not qualifying for recognition under the Grandfather Clause but who had completed one of the courses approved by A.D.E.A. prior to January 1989, are eligible to apply for recognition upon completion of the required two years full time or equivalent experience. After January 1989 diabetes educators applying for recognition will be required to successfully complete the National Educators Course and two years of full time equivalent clinical experience. Accreditation remains valid until 30th June, 1989.
at which time reassessment will be required for all Accredited Diabetes Educators (A.D.E.A. Certification Sub-Committee, 1988).

In the early planning stages, a period of supervision for beginning diabetes educators was considered; however, the idea was fraught with difficulties and the Committee resolved to charge each centre offering the National Educators' Course with the responsibility of maintaining contact with, and providing support, for course graduates. The mechanism to be used was unspecified.

**Ongoing Recognition**

Having achieved initial Accreditation, the onus is upon each diabetes educator to further develop his or her skills in diabetes education to "... maintain a certain level of clinical expertise and knowledge" (A.D.E.A., Quality Assurance, 1989, p1).

To maintain status as an Accredited Diabetes Educator, members of A.D.E.A. will be required to accrue 20 credit points annually. Activities are organised into eight categories, each with a designated maximum credit point allowance. Points are awarded for teaching activities, ongoing education, appraisal/skills assessment, committee membership, research, quality assurance, community awareness and counselling/group dynamics (A.D.E.A., 1989 [b]).

While the criteria for ongoing accreditation are designed to facilitate acquisition of skills and knowledge, in practice there are weaknesses in the present scheme. The criteria allow a diabetes educator to achieve ongoing recognition without patient contact in any form. Attendance at the A.D.E.A. conference, serving on committees, undertaking research or preparation of a publication/conference paper will earn the required 20 points. No criteria are identified as compulsory achievements, and no provision exists for peer review/assessment of performance.
Inconsistencies are evident between accreditation/reaccreditation policies of A.D.E.A. Accreditation for diabetes educators, achieved by completion of The National Educators' Course, adopts the philosophy of competence-based education. However, the requirements for ongoing recognition as they stand do not require diabetes educators to demonstrate their ongoing level of clinical competence nor do the requirements nominate levels of satisfactory performance. The competencies identified by A.D.E.A. are discussed in Chapter 5.

THE INTERNATIONAL CONTEXT

The National Diabetes Advisory Board (NDAB) in America was given a mandate by Congress to oversee the "Long Range Plan to Combat Diabetes" (National Diabetes Advisory Board [N.D.A.D.], 1984).

As is the case in Australia, American diabetes educators are represented by a professional body, the Association of American Diabetes Educators (A.A.D.E.). To maintain standards of practice the A.A.D.E. established the National Certification Board for Diabetes Educators (N.C.B.D.E.) with the expressed aim of developing a certification process for diabetes educators. This body is striving to develop and implement policies designed to provide consumer protection to diabetics and to help diabetes educators to establish themselves as a recognised professional group.

The goals of this Board are to:

1. Define standards of competence for health care professionals in diabetes education.
2. Establish and measure the level of knowledge required for certification.
3. Establish a means to encourage continued professional education and growth.
4. Recognise formally those diabetes educators meeting specified standards, including eligibility criteria and passing the examination. (Paduano, Anderson, Ingram et al., 1988, p206)
Quality Assurance for Diabetes Patient Education

To become a Certified Diabetes Educator in America, a health professional must undertake a programme of study and successfully attempt the N.C.D.B.E.'s examination. The Board defined a standard body of knowledge required by all diabetes educators, regardless of discipline or practice setting and, utilizing this content outline, developed the certification examination (N.C.B.D.E., 1987).

The programme of study consists of twelve self-study modules, containing information on the principles of teaching and learning, pathophysiology and management of diabetes, physical, psychosocial, and nutritional assessment of Type I and Type II diabetes, and programme planning and management.

The certification examination is weighted in approximately the following manner:

- Physiology and Pathophysiology 8%
- Nonpharmacologic Therapies 13%
- Pharmacologic Intervention 11%
- Monitoring and Management 23%
- Complications 12%
- Psychological Assessment and Support 15%
- Principles of Teaching and Learning 18%

Recognising the complexities of diabetes education, the N.C.B.D.E. programme is not designed for entry-level professionals. Applicants for the course are required to:

1. Hold a current license or registration as an R.N., R.D., R.P.H., M.T., P.A., M.D., D.P.M., or health care professional with a minimum of a masters degree in one's area of practice.

2. Have at least 2 years or 2,000 hours in direct diabetes patient education. (Paduano et al., 1988, p207)
For those who meet the eligibility criteria and pass the examination, certification is valid for five years; the reaccreditation process required diabetes educators to satisfactorily attempt an examination.

In Australia there are health professionals performing the functions of diabetes educators who would not meet these criteria. One can only presume this to be the case in America also. As a result, the education of diabetics is often carried out by people without specific skills and knowledge in either diabetes or the teaching-learning process.

The N.C.B.D.E., in collaboration with experts in the field, also developed national standards for diabetes patient education programmes as a strategy to overcome some of the problems experienced by diabetes educators (N.D.A.B., 1986.) The standards, applicable in any health care setting, establish specific parameters against which programmes can measure themselves. Centres offering programmes that meet the standards will be identified by a formal system of recognition.

To achieve recognition a patient education programme must fulfil the following criteria:

1. the needs of the community and individual patients are considered;
2. planning involves health professionals and people with diabetes;
3. programmes identify lines of management;
4. there is evidence of communication and co-ordination between all disciplines involved and the community served;
5. patient access to teaching is ensured allowing referral from health professionals, health care agencies, or individual patients;
6. the content/curriculum of patient education is to be based upon a documented needs assessment, appropriate for the specific target audience, utilizing community resources, and evaluated and updated periodically;
7. instruction is to be provided by qualified personnel with experience in both diabetes and education;
8. evaluation of performance is the responsibility of the institution which must provide follow-up services, including evaluation of patient knowledge and skills;
9. documentation of programme planning and evaluation, patients' response to education and communication among treatment and educational professionals must be kept.

Each standard describes obligations of the institution sponsoring the programme and the obligations of the programme itself. All standards are measured by review criteria designed to be both stringent and practical. One function of this strategy is to act as a measure for community confidence (N.D.A.B., 1986).

DIABETES EDUCATORS AS A PROFESSIONAL GROUP

Diabetes educators intent on achieving recognition as a service speciality will be required to demonstrate a totality of behaviours and attitudes that collectively define a profession.

Socialisation for Professional Practice

The socialisation process involves changes in knowledge, attitudes, values and skills. These are often associated with conflict and may ignite strong emotional reactions within the individual (Leddy & Pepper, 1985).

Socialisation into an occupational role can involve three distinct and sequential processes (Simpson, 1967). During phase 1 the person shifts his/her attention from the broad, societally derived goals which led to the chosen profession, to the goal of
proficiency in specific work tasks. During phase 2, certain significant others in the work milieu become the main reference group. Internalisation of the values of the occupational group and adoption of the behaviours it prescribes characterise phase 3.

For health professionals, already socialised into the health care culture, the effects of socialisation into the culture of diabetes education will be less obvious. Nevertheless the postgraduate resocialisation model proposed by Kamer (1974) demonstrates the process.

Stage one of this model entails mastery of specific skills and techniques. Perfecting the technique for blood glucose monitoring, becoming familiar with routine practices for follow-up/review, learning and revising knowledge of the disease process are priorities for newly appointed diabetes educators. During stage two getting along with co-workers and being accepted into the group is a priority. Stage three is expressed as moral outrage. During this stage the real/ideal dicotomy becomes evident. Feelings of anger, frustration, and of being inadequately prepared surface. Conflict resolution takes place during stage four. Individuals either change their behaviours, their values or their work milieu.

Identifying a Profession

Professionalization of a group takes place in recognised stages according to Rubinson & Alles:

1) Functional specialization,
2) Formation of professional association,
3) Public recognition,
4) Formalized codes of ethics.
(1984, p100.)

Leddy & Pepper (1985) categorise the criteria for a profession into intellectual characteristics, practical components, service to society components, and autonomy. Intellectual characteristics have three different components; a body of knowledge on
which professional practice is based, specialized education to transmit the body of knowledge, and use of knowledge in critical and creative thinking.

Bates & Linder-Pelz (1988) believe the knowledge base should be broad and generalised rather than narrow and specialised, and that members must use their judgement when making decisions about their work.

Specialist knowledge identifies a work area as unique and exclusive; unqualified persons are excluded from performing the functions. This regulation may be controlled by the legal requirements of a licence to practice, the nature of which is also controlled by the group.

Professionals are believed to be autonomous practitioners with control over their own functions in the work setting (Leddy & Pepper, 1985; Bates and Linder-Pelz, 1988). Autonomy involves independence, a willingness to take risks, and responsibility and accountability for one's own actions, as well as self-determination and self-regulation (Leddy & Pepper 1985).

Bates & Linder-Pelz identify two types of professional autonomy. One is the freedom to make and implement decisions about patient care and have some control over the work that is done. The second is being able to decide on the conditions of one's work, including where the work is done, which patients will be treated, how much to charge for one's services and which other health workers will be involved. According to these authors, "autonomy is not an absolute; it is a matter of degree" (1988, p180). These assumptions about autonomy translate into independence to make and implement decisions about patient care.

Members of a professional group come together to form an association which describes the code of ethics. Membership can be revoked in cases of professional
misconduct (Leddy & Pepper, 1985; Bates & Linder-Pelz, 1988). Standards for ethics, ethical principles, of which autonomy is seen to be basic, licensure and legal responsibility, are also considered characteristics of a profession by Leddy & Pepper (1985).

**Professionalising Diabetes Educators**

Just as nurses as a group are striving for professional status in recognition of their unique role in patient care, groups within nursing are also striving to achieve recognition for their unique contribution to nursing management.

The functional move from directing care focusing on cure, to facilitating and sharing the responsibility for care with patients, where the focus is on mutual learning, causes many diabetes educators to experience a variety of philosophical and functional changes. New skills will have to be developed, practices established, and the therapeutic model of patient care reassessed and revised. Implementation of the prevention/promotion model of professional practice will signal changes to a number of existing values and attitudes relating to the obligations of both patient and health care provider. These changes also represent opportunities for emerging professional groups equipped to implement change.

Although diabetes educators are seeking recognition as a distinct professional group and are implementing strategies designed to achieve that end, at this stage of their development they are neophytes.

While the services performed by diabetes educators are undeniably essential, the absence of several identified components weakens their case for status as an independent profession.
In contrast to the regulatory role assumed by some professional associations and licensing bodies, the professional organisation representing diabetes educators in Australia does not officially control the preparation of diabetes educators nor the qualifications of individuals assuming the functions of the role.

Every diabetes educator must possess a core of specific knowledge. However, to date this knowledge has been essentially medical in origin and based on a dependency model, which is in conflict with the self management objectives of diabetes care. Further, demonstrated mastery of the knowledge base underpinning diabetes education is not a compulsory prerequisite, at this time, to assuming the functions of a diabetes educator. The design of courses detailed earlier in this chapter further weakens the position of diabetes educators. These courses are narrow content based programmes designed to meet immediate service needs.

While A.D.E.A. has defined a minimal level of competency required of practitioners, the organisation has no enforcing authority. There are no selection criteria to be met by aspiring diabetes educators, or licensing requirements; a health professional can be appointed without any preparation for the role, and having been appointed is not required to participate in any ongoing education, peer review or quality assurance.

Diabetes educators who wish to, and who fulfil the predetermined criteria, are able to apply to A.D.E.A. to be recognised as an Accredited Diabetes Educator. However, accreditation by A.D.E.A. is not a prerequisite to appointment as a diabetes educator.

The autonomy of diabetes educators is also in question. Although there are several diabetes educators in private practice, the majority work within an environment controlled by health administrators and other medical professional groups.
Diabetes educators do fulfil the practical component and service to society criteria for professions identified by Bates & Linder-Pelz (1988). The 'Role Description of the Diabetes Educator' outlined in chapter five implies services to the community and other health professionals. However, diabetes education obviously has a long way to go before status as a profession can be achieved and acknowledged.

One of the first steps will be to implement a compulsory programme designed to provide diabetes educators with skills to meet not only their immediate service needs, but also their continuing educational needs. Satisfactory completion of this course would become a prerequisite to assuming the functions of a diabetes educator. At the very least, a minimum time period in which the course must be completed to retain the position should become part of A.D.E.A's policy. Once a programme of study based upon a body of knowledge identified as necessary for diabetes educators is established, a minimal standard of practice must be defined and enforced. Although A.D.E.A. is addressing some of these deficiencies at present, others, such as compulsory minimal education followed by legal authority to practise are not, I believe, realistic expectations in the present health system. The quest for recognition by other professional registering bodies, for example the Nurses Registration Board, can, nevertheless, be pursued.

Identification of minimal standards of competence, a programme of study designed from a broad educational base, as opposed to the present service orientated courses, and requiring rigorous study for satisfactory completion is an essential first step. In addition, some form of accreditation prior to practice should be developed.

The ethical and moral dimensions of professional diabetes practice must be identified and defined and mechanisms designed, ratified by members, and utilized to sanction instances of unprofessional conduct in diabetes education.

The impetus for change must come from the demonstration of benefits in patient
care and the professional aspirations of diabetes educators. To this end Australian diabetes educators could look towards international developments to guide their progress.

Diabetes educators recognise that inadequate coverage of the health teaching role is a deficiency in their basic professional training and, as a foundation for their moves towards professional recognition, are attempting to rectify the situation. Important decisions relating to the place of study, course content, entry requirements, and the level of award which will have far reaching implications for health professionals, and indirectly their patients, are being made at this time in Australia. Careful consideration must be given to who is going to make these decisions and how a consensus is to be reached. It is important that decisions about curriculum development be made only after examination of how they will be executed and how they will continue to meet requirements. There is a danger of being locked into a situation that is constricting in political and administrative terms (Gale, O'Pray & Pugh, 1981).

Professional Relationships

There has always been a distinction between the academic professional preparation of doctors and the practical forms of nursing curriculum and this situation was perpetuated through the dominant/submissive nature of the doctor/nurse relationship in the clinical setting. Nurses failed to identify and clarify their unique skills, and as a result, doctors, other health professionals and the general public failed to recognise that there were, in fact, unique nursing skills. Nursing was identified as a handmaiden role. This role confusion continues today, albeit in a more covert way (Bates, 1978). There are medical practitioners who do not understand the nature of, or the need for, the tertiary curricula now being implemented in basic nursing programmes and who do not understand the moves by diabetes educators toward a professional identity of their own. These attitudes fail to recognise the advances of medical science and the knowledge required by professionals in a variety of fields. Such values held by the still dominant
medical profession could impact upon the endeavours of diabetes educators to achieve a professional curriculum.

The effects of this disparity of standards are evident in the data collected for this project. These values and beliefs, indicative of the hidden curriculum in health care, are important and should be addressed by diabetes educators.

Distinctions between the level of knowledge expected by different groups within the health professions remain a form of social control (Kelly, 1980). This has also been the case in preparing health care professionals. The majority of diabetes educators began their professional lives as general nurses who were trained to meet service needs of hospitals under the direction of other health professionals. These health professionals undertook what amounts to work skills training with a knowledge base directly related to the discharge of their duties. Cursory attention was given to the biological sciences, and the psychosocial aspects of nurse/patient interaction, essential for successful behaviour change in diabetes education, was largely neglected.

To rectify this situation one objective of current curriculum development must be to include elements of an academic preparation. The educational environment is dynamic, changing in time with social needs and expectations. Every effort must be made during a curriculum development exercise not to produce a piece of work that largely replicates what has gone before. The new curriculum must consider and address the issues that marked the existing policy as inappropriate. Failure to consider the changing needs of learners and of their prospective market will produce a curriculum that stifles both teachers and learners.
SUMMARY

Diabetes educators are undertaking a number of strategies aimed at improving the outcomes for patients with diabetes, and professional recognition of diabetes education as a clinical specialty. The A.D.E.A. has undertaken policy development aimed at increasing professional skills and maintaining standards of practice. Diabetes educators are a relatively new specialty group working in an underdeveloped area of patient care - patient education.

While international developments may provide guidelines for development of the group in Australia, ultimately, local conditions will dictate policy direction.

Relationships between health care groups, dictated in part by the political context of patient care, support and perpetuate the hierarchical relationships between participants, and will influence the political context of professional preparation. Past evidence of this situation is obvious, and the situation will, in all probability, continue in the health care environment in the foreseeable future.

It is important to the future professional status of diabetes educators that the policies being developed do in fact assist diabetes educators to achieve their goal of professional recognition.
CHAPTER 4

THE EDUCATIONAL CONTEXT

LOCATION AND CONTENT OF TEACHING
QUALIFICATIONS AND EXPERIENCES OF TEACHERS
CHARACTERISTICS AND EXPECTATIONS OF LEARNERS AND TEACHERS
REVIEW OF DIABETES PATIENT EDUCATION PROGRAMMES
REVIEW OF PROGRAMMES FOR DIABETES EDUCATORS
- Continuing Education
FUTURE EDUCATION FOR DIABETES EDUCATORS
SUMMARY
The location and content of teaching, qualifications and experiences of teachers, and characteristics and expectations of the learners and their teachers contribute to the learning environment.

LOCATION AND CONTENT OF TEACHING

Diabetes patient education currently takes place in a variety and a combination of settings. This education may take place during hospitalisation, during out-patient visits, in group programmes conducted in education centres or in a doctor's office.

The findings of the 1987 Search Conference (Australian Diabetes Foundation (A.D.F.), 1987) suggest that success as a diabetes educator requires more than simply a knowledge of the pathophysiology of diabetes. While an in-depth investigation of the appropriate content will not be undertaken at this time, it is sufficient to say that the theoretical foundations are unlikely to be developed by on-the-job training. A case can reasonably be made that diabetes educators should undergo a course of training which aims to achieve a defined and accepted set of competencies for practice.

QUALIFICATIONS AND EXPERIENCES OF TEACHERS

At the present time any health professional, with or without formal training, is entitled to assume the role of a diabetes educator, and while the importance of education for all diabetics is universally accepted (WHO, 1980 & 1985), in Australia at least, it is acknowledged that health care providers are not sufficiently prepared to provide holistic diabetes care (A.D.F., 1987).

This situation is not unique to Australia and diabetes educators in general are attempting to change attitudes and behaviours using techniques they often do not understand, working within diabetes services that are neither well organised nor evaluated.
(Beaven et al. 1988). For example, a survey of 204 acute care hospitals in Ohio found that diabetes education was usually conducted by staff nurses and dietitians, whose most frequent source of educational preparation was on-the-job experience. Educators often had no formal training in diabetes per se, and a complete lack of formal understanding of teaching/learning and behaviour change processes. Support from other health professionals was minimal. One third of the hospitals had a formal diabetes education co-ordinator, one half had an informal co-ordinator, and one fifth had no co-ordinator (Essig & Thielen, 1982).

In an attempt to evaluate how effectively diabetes educators pass on skills and knowledge, Lorenz (1986) assessed patients' ability to recall instructions. In exit interviews patients were able to recall only 46% of recommendations given in the interview.

It has been recognised that participation in an education programme does not always bring about desired changes in patients' behaviour (Bloomgarden, Karmally, Metzger, Brothers et al. 1987; Beaven et al. 1988; Madan & Raad, 1988). Health professionals become frustrated by the failures, feel discouraged, and may even give up their attempts to educate patients.

The deficit in professional preparation and support is an important factor in nurses' reluctance to be involved in diabetes education. A survey of diabetes educators in the U.S. (Weinzeirl, 1983) reported that nurses felt uncomfortable about the lack of clear expectations of their role, their level of prerequisite knowledge and their abilities to teach patients.

A major problem according to Lorenz (1987) is that health professionals generally do not perceive themselves to be patient educators and therefore fail to recognise educational opportunities present in almost all interactions between professionals and
patients. Failure to recognise educational opportunities is compounded by factors contributing to ineffective patient education which include insufficient instruction time, the variability of patients and their needs, lack of consensus on medical issues and ineffective teaching practices. This situation could be remedied in part by encouraging patient educators to undertake specific training, and the inclusion of communication and teaching skills in curricula offered to health professionals.

As the emphasis in health care shifts to incorporate prevention as well as cure, patient education programmes have flourished. Training personnel to establish and run programmes is, however, given minimal attention by both educational and health care institutions. A survey of 249 academic institutions (unspecified) in America revealed that less than 18% offered courses with a focus on health education (Prigg, 1982). The same survey also investigated the status of patient education programmes in health care facilities. In a number of cases, those who assumed roles in patient education did so without the benefit of formal preparation, while those who had some form of preparation had completed minimal study, often only one course. The effectiveness of many trained staff was further limited by their part-time employment status.

The problems experienced by health professionals thrust into the role of diabetes education without any preparation for the role are recognised. However, these problems are not restricted to health professionals in formally recognised patient education roles. In reality, all health professionals are educators, and in an attempt to prepare them for this important facet of their health care function, the World Health Organisation (1985) has called for a review of the undergraduate medical curriculum and of instruction courses for nurses, physicians, and allied health professionals involved in diabetes education.

While American research indicates that health professionals, irrespective of preservice background, are generally lacking preparation for the task of educating diabetics, comparable Australian research does not exist. Formal documentation of the
skills, experiences and effectiveness of diabetes educators in Australia is needed. Collection of this information and identification of required competencies is the core of this research project.

CHARACTERISTICS AND EXPECTATIONS OF LEARNERS AND TEACHERS

Incongruent perceptions among nurses and patients of the nurse's role in patient education have also been demonstrated (Tilley, et al., 1987). Nurses and patients do not always agree on the most effective techniques for transferring knowledge and changing behaviours. Research also indicates that few nurses acknowledge a basic rule in patient education, that is to include the patient, and his family if appropriate, in goal setting; planning what the patient needs to know, and how this information can be presented to achieve maximum behaviour change and optimum quality of life (Lorenz 1987; Tilley et al 1987). As a result, patients often are not clear about the skills and knowledge they need and/or goals do not always reflect areas identified by the patient as important. Lorenz concludes that the endeavours of diabetes educators will be improved by clearly defined objectives, methods for assessing outcomes of patient education and defining the outcome variables to be measured.

Metabolic control is a core outcome measure and a variety of techniques and strategies have been utilized in an attempt to improve the metabolic control of patients. These are reviewed below.

REVIEW OF DIABETES PATIENT EDUCATION PROGRAMMES

**Group therapy**, or psychotherapy, has been used with a range of physical diseases. Group therapy education requires a trained therapist who directs a selected group, with a social structure that includes rules for behaviour. Group therapy is not a
means of dispensing education to as many people as possible at one time, nor is it a get-together of people with common interests. Rather, psychotherapy groups share the principle that talking about feelings, ideas, and experiences in a safe, respectful atmosphere, increases self-esteem, deepens self-understanding, and helps a person get along better with others (Zrebiec, 1988). The effectiveness of these principles has been demonstrated in education of adults by Rogers (1983). Individual counselling and instruction is appropriate in other circumstances (Rost, 1989; Slaytor, 1987).

**Inpatient education programmes**, often in a camp environment, have been used for adults and children (Anderson, Nowacek & Richards, 1987; Berger, 1987). **Outpatient stabilization programmes** that encourage patient participation while discouraging adoption of the patient role are widely utilized in diabetes education (Moffitt et al., 1979; Campbell, Chisholm & Barth, 1984; Paulozzi, Norman, McMahon & Connell, 1984; Hoskins et al. 1985; Bloomgarden et al. 1987).

Efforts have also be made to determine the most effective and efficient use of educational resources.

The Diabetes Education Study (DIABEDS) was a randomized, controlled trial of the effects of patient and physician education. The results indicated that patient education programmes should be behaviourally orientated emphasising; (a) self-care behaviours rather than the disease process, and, (b) mechanisms to alter the self-care environment (Mazzuca, Moorman, Wheeler, Norton, et al., 1986).

Mazzuca (1982) also reviewed 30 articles on patient education where the dependent variables included; (a) compliance with a therapeutic regimen, (b) physiological progress of patients, or, (c) long-range health outcomes. He concluded that efforts to improve health by increasing knowledge alone are rarely successful. The success of behaviourally-oriented programmes were also demonstrated by Paulozzi et al.
The Self-Efficacy for Diabetes Scale (SED) (Grossman, Brink & Hauser, 1987) was developed to study adolescent patient perceptions and physical health. Based upon Bandura's concept of self-efficacy, the magnitude and generality of participants' perceptions of their personal ability or power in diabetes related situations were assessed. Results demonstrated that strong diabetes self-efficacy beliefs are also linked to greater self-esteem, and increased levels of metabolic control. These findings are important to those health professionals responsible for determining the focus of education programmes, and the selection of content and instructional techniques.

The problems encountered by adolescent diabetics have prompted development of innovative programmes designed to provide motivation and improve self esteem, and, in doing so, improve compliance. Marrero, Fremion & Golden (1988) implemented a 12 week self-administered exercise programme for insulin dependent children aged 12-14 years. Participants were provided with a 'movement-to-music' routine with a goal of raising heart rate to >160 beats per minute. Results demonstrated significant reduction in mean glycosylated haemoglobin, and increase in aerobic work capacity.

The effectiveness of a time-limited nutrition education programme emphasising social learning components of problem solving and self-efficacy was assessed by Glasgow, Tobert, Mitchell, Donnelly & Calder (1989). Behavioural components included goal setting and modeling strategies. Problem solving was also emphasised. The programme was successful in assisting participants to achieve stated goals of reduced calorie and fat intake, and increased fibre content of their diets. Weight loss, although not emphasised, was also achieved.

The importance of specialised diabetes education centres has been demonstrated (Hayes & Harries, 1984). Comparison of routine care provided by a
hospital diabetic clinic and routine care in general practice indicates that, for patients with non insulin dependent diabetes mellitus, routine care in general practice was less satisfactory than care by the hospital diabetic clinic. Morbidity and mortality was higher in the general practice group compared with the hospital group.

Moffitt, et al. (1979) demonstrated that a combination of patient education focusing on the basic principles of management, outpatient stabilization, and the introduction of an intervention service allowing diabetics to contact educators in person or by telephone, reduced bed occupancy by diabetics by 1400 bed days per year.

In all probability, it is a combination of variables that accounts for the fact that, although diabetes education has the potential for improved health outcomes and decreased costs, there is no firm empirical evidence upon which to base this inference (Kaplan & Davies, 1986). In the current climate, it may be prudent for health professionals to reflect upon which patients make suitable candidates for education, and individualise education according to the expressed goals of each patient.

The effectiveness of patient education programmes is influenced by the skills of the educators and their approaches to teaching.

REVIEW OF PROGRAMMES FOR DIABETES EDUCATORS

A variety of models ranging from six month programmes to continuing education workshops has been used to improve skills and knowledge of specialist diabetes educators. Australian practices have been described in Chapter 4. Internationally a variety of models has been implemented and evaluated.

In America, Model Demonstration Units (MDU), established at various Diabetes Research and Training Centres, provide a unique setting for the training of health
professionals, research into new methods of education for health care practitioners, and for clinical research (Masse & Engel, 1986).

Within an MDU participants from all levels of health care professionals are able to provide health care free of the usual structural constraints found in the clinical area and experience state-of-the-art diabetes care and education in an environment that fosters biomedical, behavioural and educational research. Emphasis is placed upon the multidisciplinary team, all members of which attend workshops and lectures conducted by team members with specialist skills. This cross disciplinary approach emphasises flexibility and facilitates the incorporation of skills and concepts not traditionally found in diabetes continuing education programmes for health professionals.

The design and the content of programmes varies according to the needs of participants. The MDU emphasises the importance of a multidisciplinary team approach to diabetes care, a system of data collection and data analysis, and the need for research into diabetes education as well as clinical diabetes. Over a period of 1 to 2 years trainees work directly with each member of the team, during which time their role evolves from being an observer, to a care partner, and eventually to a case manager. Each of the Diabetes Research and Training Centres has its own unique MDU that reflects the centres' varied research and training priorities. Common to all is the overriding purpose of integrating professional education with research and patient care.

To replicate the MDU, the following features are necessary:

1) a multidisciplinary team,
2) a system of data collection,
3) a system of data analysis,
4) adequate time to develop and implement research ideas, and
5) appropriate financial, personnel, and facility resources.
When examined closely, the outstanding difference between the MDU and diabetes education centres in Australia is the lack of formal documentation and data analysis in Australia. All but the most isolated diabetes educators in Australia should be able to replicate the MDU. Utilizing a distance learning curriculum as the theoretical foundation, a similar model could, with minimal disruption to existing centres, be instituted. Clinical experiences would be obtained in existing work environments, in collaboration with other institutions if necessary. The result should be improved care for diabetics and thoroughly trained diabetes educators.

Other programmes have also proven effective. One introduced nursing staff to the pathophysiology, diagnosis, management and complications of diabetes and to teaching/learning principles (Weinzeirl, 1983). The programme provided a teaching manual approach to patient education with clear guidelines for what information to teach patients, how to set priorities for patient education, and how to teach various skills. Continuous feedback was provided to participants by a self-assessment tool which was also used as part of the programme evaluation. One year later an audit of attitudes toward, and participation in patient education was undertaken; 95% of course participants indicated confidence in patient education.

The effectiveness of professional training in diabetes has also been assessed following a 5 day programme, using trainee reports of improvements in their diabetes education programmes (Warren-Boutlon, Hershey, Hooper, Lange, Flavin et al. 1986). In spite of existing organisational barriers to patient education, trainees reported that the skills and knowledge they had acquired during the course had enabled them to implement a number of changes to their educational programmes especially in the areas of evaluation and documentation. The programme also encouraged trainees to recognise the complexity of institutions and interprofessional relationships and the nature of barriers to patient education.
In West Germany, the National Diabetes Association sponsors a 320 hour postgraduate course for nurses and dietitians wishing to become diabetes educators (Scholz, 1984). Emphasis is upon the factors that influence an individual's reaction to instruction. Health professionals who wish to optimise their results in altering the behaviours of diabetics must not only be cognizant of the disease process but must also understand the learning processes and be equipped with a wide repertoire of teaching techniques which may be adapted according to the setting and the patient to achieve maximum behavioural changes.

Participants were also required to have at least one year of practical experience with diabetes patients and be employed by hospitals planning to institute a diabetes teaching programme. The theoretical component of the course is spread over two four week study blocks six months apart. During the six month interval participants apply their skills and knowledge to the clinical setting and complete preset assignments. Part 1 of the course has been evaluated and, as expected, objective evaluation of the programme demonstrated increased knowledge. During subjective evaluation, participants identified teaching design as the most difficult topic, however, this finding attracted no explanation from the author apart from the decision that Part 2 of the course should concentrate on further improvements in the presentation of teaching behaviour and teaching design.

Continuing Education

The use of workshops as learning environments for health professionals has been extensively investigated in America. A one-day workshop was designed to improve educator skills in educating patients with diabetes (Martin, McNeal, Kronenfeld & Wheeler, 1986), and Cook and Cohen (1986) also developed a workshop model to address four problems they identified amongst diabetes educators. The first problem was concerned with mastery of teaching skills. Other problems identified were selecting teaching aids, solving problems in programme management and evaluating diabetic
patients' educational programmes. These researchers found that the workshop model helped participants to learn how to solve their own problems in programme management, teaching skills, teaching aids and evaluation. Over the two-day workshops participants investigate ways of:

1) improving teaching skills,
2) evaluating teaching aids,
3) evaluating programmes,
4) managing programmes.

The workshop model has also proven to be an effective method to acquire skills in co-ordinating diabetes education programmes (Whitman, 1981), to start a programme where none exists, and to improve an existing programme (Jacobson, 1984).

The contribution of an empathic educator to the development of quality patient/educator interactions is recognised to be a major determinant of regimen adherence in the management of chronic disease (Warren-Boulton, Auslander and Gettinger, 1982). These researchers utilized a simulation exercise to sensitize diabetes educators to the problems patients experience in regimen adherence. This exercise has been shown to be an effective educational tool for helping health professionals to develop greater sensitivity to the complexities of adherence to a therapeutic regimen.

In an attempt to improve the design of continuing education programmes, researchers at the Joslin Diabetes Centre in America surveyed 793 nurses (Heller & Brown, 1983). Response revealed a strong interest in diabetes continuing education and identified preferences for topic areas. Responses also indicated that nurses involved in diabetes education differ widely in their expertise, experiences and therefore in their continuing educational needs and preferences. The location of courses is important, as is the duration. Respondents did not favour travelling long distances to courses and
preferred courses to be of one day duration, held on weekdays. While acknowledging that respondents preferred the lecture mode of presentation, these researchers recommend a variety of methods such as workshops, small group discussions, case studies, and observational experiences. These findings emphasised the need for programme organisers to take the backgrounds and experiences of participants into account when designing courses.

Since 1977, seven Diabetes Research and Training Centres (DRTCs) in America have offered many continuing education (CE) conferences on the latest information on diabetes research and clinical practices (Bashook, 1986). The underlying assumption was that attendance at a CE conference would motivate educators to implement recommended patient care. However, CE conferences appear to play a limited role in changing directly the behaviour of health professionals. Bashook recognises that health professionals are voluntary, self-directed learners seeking the "fastest, cheapest and easiest way to learn what they need". Therefore, he concluded that the CE model of professional development failed to take the nature of the learners into account and that small on-site workshops and individual consultations are more likely to lead to changes in behaviour. Continuing education conferences do however, foster informal communication networks. How important these networks are to diabetes educators is not known. It is known, however, that communication networks are important sources of information for physicians (Stross & Harlan, 1979). Bashook concluded that CE programmes most likely to encourage quality patient education are those that recognise the diversity of learning needs, allow health professionals to participate according to their needs, and continue to provide an informal forum encouraging development of communication networks. These suggestions are consonant with the principles of adult learning outlines in Chapter 2.
FUTURE EDUCATION FOR DIABETES EDUCATORS

Continuing education in diabetes care and teaching skills is important for all nurses not only those identified as diabetes educators. In the preparation of future health professionals, 'mere knowledge is not enough' (Coulon et al. 1985, p27). The health care priorities of prevention and holistic care demand that consideration be given to attitudinal factors when designing professional curricula. Type and location of training, and age and sex of participants have an influence upon how knowledge is received and attitudes formed. Professional knowledge, conceived in terms of criteria, specific objectives and hierarchies of knowledge are no longer sufficient. Rather, new educational perspectives must focus upon the "complex interrelatedness of the numerous factors which contribute to professional preparation" (Coulon et al. 1985, p.31). Methods of professional development for diabetes educators should be reviewed with this in mind.

Successful training should result in patients who are more knowledgeable, more skilful and more consistent in adherence to their self-care regimen (Lorenz, 1986). Curricula designed for practising health professionals offer an opportunity to move away from learning governed by objectives toward educational experiences that are intrinsic to the experiences and understanding of participants; education experiences based upon competencies identified and valued by learners.

SUMMARY

Diabetes education is undertaken by health professionals with differing service backgrounds and professional experiences and, therefore, differing educational needs and preferences. While this diversity encourages a health care team approach to patient care, lack of standardisation can cause problems for educators and patients. Research indicates inconsistent results of patient education which, at best, increases knowledge, often
SECTION C

CORE COMPETENCIES
CHAPTER 5

DEFINING CORE COMPETENCIES

INTRODUCTION
STANDARDS OF PROFESSIONAL PRACTICE
IMPLICATIONS OF CORE COMPETENCIES FOR:
  - Education Programme
  - Evaluation of Competence
  - Practice of Diabetes Educators

SUMMARY
INTRODUCTION

A profession is identified by the common purposes of its members. A professionally competent diabetes educator must possess certain knowledge, appropriate attitudes, performance skills and the ability to put these together to bring about the desired learning, attitudes and behaviours amongst people with diabetes.

A substantial number of diabetes educators are nurses. To meet the service needs of hospitals nurses are frequently seen as interchangeable and replaceable. This practice is to the detriment of both patients and practitioners. Administrators have attempted to adapt to high rates of staff turnover with policies and procedures designed to standardise and routinize practice. As a result of such attitudes and practices, excellence in patient care is rarely recognised or acknowledged.

Formalising the functions of diabetes educators into competencies demonstrates the specialised nature of diabetes education and the skills required by professionals undertaking those functions.

Identifying the characteristics of a competent practitioner is one facet of quality care; monitoring the quality of care is another. The quality of care is measured and monitored against standards of practice.

STANDARDS OF PROFESSIONAL PRACTICE

Central to standards of practice and curriculum development by A.D.E.A. has been the release of a draft document, 'Role of Diabetes Educators', which describes the role description and minimum skills required to function as a diabetes educator (A.D.E.A, No.21, 1988). The document groups skills into categories identified as technical, knowledge, educational assessment, research, management and organisational skills.
In addition to the minimum competencies identified, the document goes on to address the issue of a code of ethics as a regulatory tool for maintaining standards. The behaviours diabetes educators will be expected to exhibit and adhere to include quality assurance, sound educational principles, the ideology of teamwork, group skills and community development. Diabetes educators will be expected to demonstrate evidence of these skills in the planning, implementation and evaluation of patient education and care.

It is intended that these competencies will be developed from skills and knowledge obtained by satisfactory completion of the National Educators' Course and refined during a period of clinical experience supported by an experienced diabetes educator acting as mentor. These are prerequisites to accreditation as a diabetes educator by A.D.E.A.

The undertakings of A.D.E.A. represent a desire by this organisation to:

1. control the future of diabetes education and those professionals who assume the functions of diabetes educator;
2. encourage higher standards of professional practice by diabetes educators; and,
3. achieve recognition of diabetes educators as a resource group for health promotion and disease prevention.

Holistic diabetes care requires highly skilled practitioners. The purpose of competence-based education is to ensure practitioners develop identified skills, thereafter, it is the responsibility of diabetes educators as a group to ensure a high level of competence is maintained.

Policies need to be formulated and implemented which will allow the diabetes educator to be accepted as a professional.
The competencies compiled by A.D.E.A., and extended in Chapter 8 of this thesis, provide direction for the education of those wishing to work in the area of diabetes education. These competencies represent the beginning of a process that will have implications for all aspects of diabetes care. As diabetes educators initiate the processes that are to support their claim for professional status, change will be evident in the education programmes for practitioners, evaluation of patient care, clinical practice, and approaches to research.

IMPLICATIONS OF CORE COMPETENCIES

Implications for Education Programmes

Competence-based education assumes that the theoretical foundations will guide the practitioner safely and efficiently through clinical learning opportunities, providing the background knowledge that enables the clinician to ask the right questions and identify existing and potential problems.

For diabetes educators this implies strong educational preparation in the biological and psychological sciences as well as the management of diabetes. This knowledge not only provides the basis for safe care, but also places the student in a position to learn from experience.

Levels of competence also imply different continuing education needs for those at each level of skill acquisition. Problems will be similar within each level as will appropriate instructional strategies. For example, practitioners at higher levels of proficiency benefit from exchanges, clinical case studies, and opportunities to conduct and participate in research on clinical problems. Beginning diabetes educators on the other hand, require more didactic instruction and guidance from experienced colleagues (Benner, 1984). These are factors that must be considered in the design of continuing
Implications for the Evaluation of Competence

To assess achievement of competence comprehensive theory and performance examinations, tested for reliability and validity, need to be developed by A.D.E.A. Evaluation of competence also requires contextual aspects to be taken into consideration (Benner, 1984). To be effective the competencies must be functional and the minimum degree of achievement required determined.

The profession must also consider how these standards are to be enforced and monitored. A.D.E.A. may decide to retain control over the practice of diabetes educators and maintain the current system of accreditation. Alternatively, licensure controlled by a government agency, as currently applies to midwives for example, may be adopted. Certification, in which a non-government agency or association grants recognition to an individual who has met predetermined qualifications, specified by the agency or association, is an alternative method to control entry into, and the continuing practice of, diabetes education.

Implications for the Practice of Diabetes Educators

Competence-based education has implications not only for professional education of diabetes educators, but also for research and clinical practice, and career development.

By studying and comparing the clinical practice of nurses demonstrating different levels of competence, researchers will be able to identify characteristics of, and the outcome emphasis associated with different levels of practitioner. Approaches to patient care, practitioner/patient interactions, assumed roles, monitoring and organisational skills and definitions of caring demonstrated by educators can be identified, monitored,
documented and compared. This information is invaluable feedback for course developers and evaluators who are called upon to provide answers to questions relating to current directions and future needs.

Demonstrated levels of competence are also associated with a systematic approach to career development. A career ladder for promotion can be developed from documentation of the knowledge and expertise developed from experience. Levels of competence resulting from experience carry identified knowledge and clinical judgement levels recognisable by organisational managers (Benner, 1984).

**SUMMARY**

Diabetes educators are expected to exhibit a range of skills and attitudes associated with professional practitioners. A.D.E.A. has developed a role description identifying the minimum level of competence required by a health professional to fulfil the functions of a diabetes educator. Standards of practice, intended to be the basis of a quality assurance programme are being developed.

Introduction of these methods of quality assurance and creation of an environment conducive to achievement will have implications for practitioners and the emphasis of the care they provide.

While the acquisition of knowledge and competence alone would not automatically make one a professional, at least establishing competencies, providing specific education and demonstrating achievement would be progress in the desired direction.
CHAPTER 6

NEEDS ASSESSMENT

INTRODUCTION
QUESTIONNAIRE DESIGN
PILOT STUDY
LOCATION OF THE STUDY
DATA COLLECTION AND RECORDING
  - Diabetes Educators' Resource Survey
  - Diabetic Patients' Attitudinal Questionnaire
  - Physicians'/Endocrinologists' Interview
DATA ANALYSIS
  - Diabetes Educators' Resource Survey
  - Diabetic Patients' Attitudinal Questionnaire
  - Physicians'/Endocrinologists' Interview
INTRODUCTION

Various techniques have been used to determine curriculum content. This needs assessment utilized a similar approach to that of Spivey (1971), described in Chapter 1.

Diabetes educators and patients with diabetes were surveyed and physicians interviewed to collect data that could be used to determine the effectiveness of previous training and future training needs of diabetes educators.

A draft curriculum was developed and circulated to diabetes educators who were asked to comment upon the design and content. The curriculum was then revised (Appendix 1).

QUESTIONNAIRE DESIGN

The questionnaires and interview guide were designed by the researcher. The content was devised from a variety of resources including the literature, personal experience in education of health professionals and patients, discussions with diabetes educators, physicians and tertiary level teachers of education and community health.

Diabetes Educators completed the Diabetes Educators' Resource Survey (Appendix 2), and a Curriculum Evaluation Questionnaire (Appendix 5). Patients with diabetes completed the Diabetic Patients' Attitudinal Questionnaire (Appendix 3), and interviews with physicians were structured using the Physicians Interview Guidelines (Appendix 4).

Self-administered questionnaires enabled diabetes educators and patients over a wide geographical area to participate in the survey. Anonymity of individual participants was assured. However, the problem of non-response, one of the greatest disadvantages
of the questionnaire technique (Nay-Brock, 1984), was evident particularly in the return of survey forms completed by patients.

Reluctance on the part of physicians in general to complete questionnaires, a smaller sample size and opportunities for interpersonal interactions meant that personal interviews were the most appropriate method for obtaining information from this group. Personal interviews also provided an opportunity for in-depth study of the issues involved and clarification of responses (Nay-Brock, 1984).

PILOT STUDY

Eighteen diabetes educators and 20 patients with diabetes in the Illawarra and Southern Highlands Regions of New South Wales were asked to participate in the pilot study. The response rate for both educators and patients was high, being 17 (94%) and 17 (85%) respectively. Based upon comments and analyses of answers from the pilot study, alterations and modifications were made to both questionnaires prior to distribution to subjects for the main survey.

a) Diabetes Educators' Resource Survey

Educators were asked to note the time taken to complete the questionnaire, identify questions found to be ambiguous, and include comments and suggestions relevant to the survey.

Non-response by diabetes educators to questionnaires distributed by A.D.E.A. is a problem. The researcher believed that personal contact with each participant, an addressed postage paid envelope and estimated completion time of ten minutes would increase the response rate to this questionnaire. To maintain the ten minute completion time, it became obvious from the times noted (up to 30 minutes) that some re-evaluation
of content and format was appropriate prior to the main survey.

Two questions relating to organisational change and presentation of content were removed. On several questionnaires those questions remained unanswered, or responses indicated that the questions had been misinterpreted.

Other questions were modified to allow respondents greater flexibility. The options 'occasionally' and 'not applicable' were added to a number of questions. 'Excellent' and 'readily available' were added to questions relating to quality and quantity.

The questions were re-organised into common themes, for example, all questions relating to evaluation were grouped together and several repetitious questions were removed. Although these questions could serve as a check for consistency it was decided that for the purposes of this survey, this was less important than encouraging high response rates with a shorter questionnaire.

b) Diabetic Patients' Attitudinal Questionnaire

Minimal changes were necessary to this questionnaire prior to the main study. Question 16, relating to acquisition of knowledge, was restructured from a five point Likert Scale to a yes/no option which is considered a more appropriate response to this question.

LOCATION OF THE STUDY

Data collection for the survey was confined to New South Wales. Diabetes educators in South Australia were initially asked to participate, however, due to a very poor response rate (10%) these questionnaires were removed from the sample. Although personal contact had not been made with diabetes educators interstate, contact had been
made on several occasions with organisers of a study day intended to bring together a number of diabetes educators. Given the undertaking by organisers to distribute questionnaires and attendance of anticipated respondents at a study day, the low return rate was unexpected and is disappointing from a group of professional practitioners, however, the return rate is consistent with that experienced by A.D.E.A.

At the time questionnaires were distributed, there was no specific listing of hospitals employing diabetes educators or register of health professionals working in this capacity in New South Wales. Twenty subjects for the pilot study were drawn from the Wollongong Diabetes Education Centre, Goulburn Community Health Centre, and Bowral and District Hospital. The educational environment varies between each of these locations, as does the target population and the resources available to educators.

Following collation of pilot study results and modification of the questionnaires, data collection for the main study was undertaken using thirty three health professionals working as diabetes educators in Lismore, Newcastle, Sydney, Wagga Wagga, Nowra and Campbelltown. These centres were chosen because they represent the broad range of contexts in which diabetes educators work.

DATA COLLECTION AND RECORDING

a) Diabetes Educators' Resource Survey (Appendix 2)

Diabetes educators working at the centres selected to participate in this study were telephoned. The aims of the study were explained and their willingness to participate sought.

A copy of the Diabetes Educators Resource Survey accompanied by a covering letter explaining the aims of the study, the procedures for completing and returning the
completed questionnaire and a return paid envelope was sent to each participant. One month later a letter was sent to each diabetes educator who had not returned the questionnaire. This letter was followed by a telephone call three weeks later to recipients of the remaining outstanding questionnaires.

Health professionals who have assumed a de-facto diabetes education role were not included in this sample. Although this is a limitation to the study, the absence of listings and registers makes locating these individuals difficult.

b) Diabetic Patients' Attitudinal Questionnaire (Appendix 3)

Patients attending clinics in country and metropolitan New South Wales were surveyed.

Copies of the Diabetic Patients' Attitudinal Questionnaire were to be distributed by educators to patients attending their clinics in the month immediately following receipt of the questionnaires. Diabetes educators at these centres were also taking part in the Diabetes Educators' Resource Survey. The researcher believed that utilizing patients and educators from the same centres would increase the response rate for several reasons:

1) educators who are familiar with the research and aware of the purpose of this survey, and who had indicated their commitment to the study by participating, could be expected to ensure questionnaires were distributed to patients;
2) patients could be more likely to participate in a study supported by a diabetes educator they visit;
3) absence of a register identifying diabetes education centres makes locating individual patients with diabetes difficult.
To minimise the potential for educators to bias their patients, or patients to answer according to perceived educator wishes, a reply paid envelope and a letter of explanation was attached to each questionnaire. By doing this, minimal communications would be necessary between patient and educator and patient responses would be mailed directly to the researcher. A consent form to be signed by each patient was also attached.

c) Physicians'/Endocrinologists' Interview (Appendix 4)

An interview was conducted by the researcher with 15 physicians practising in country and metropolitan New South Wales. Participants were a convenience sample obtained at gatherings of physicians with special interest in diabetes. The researcher was known to the majority of interviewees. Each interview extended from 10-15 minutes during which time notes were taken.

DATA ANALYSIS

Diabetes Educators' Resource Questionnaire

Questionnaires were analysed in two groups divided according to whether respondents had received previous instruction in the teaching/learning process. Respondents who indicated they had received instruction were assigned to Group A; those indicating they had not received this instruction were assigned to Group B. Group results were examined to compare practices in lesson planning, implementation and evaluation, their self-perceived levels of clinical competence and areas nominated for further study.

Comparison was also made between the two groups in relation to their expressed desire to undertake further study in educational techniques, programme planning, communication skills, counselling techniques or research methodology.
Diabetic Patients' Attitudinal Questionnaire

The questionnaires were analysed to demonstrate the frequency of each response on a Likert Scale rating of five options, ranging from 'Unsatisfactory' to 'Very Satisfactory'.

Data from this questionnaire were used to assess perceptions of diabetics concerning educators' use of educational strategies such as management by objectives, pre-instruction and post-instruction testing of knowledge, communication and counselling skills, and evaluation of needs, processes and outcomes. The level of consumer satisfaction was also assessed.

Physicians'/Endocrinologists' Interview

Responses obtained during these interviews were categorised according to themes. These themes were compared with data obtained from patients and educators.
CHAPTER 7

RESULTS AND DISCUSSION

DIABETES EDUCATORS' RESOURCE SURVEY
DIABETIC PATIENTS' ATTITUINAL QUESTIONNAIRE
PHYSICIANS'/ENDOCRINOLOGISTS' INTERVIEW
SUMMARY
In this chapter the following results and discussions are presented:

a) Diabetes Educators' Resource Survey;

b) Diabetic Patients' Attitudinal Questionnaire;

c) Physicians' Interview;

A) DIABETES EDUCATORS' RESOURCE SURVEY

Response Rate

Thirty three diabetes educators working in hospital and community settings in country and metropolitan areas of New South Wales were approached to participate in the survey; 24 (73%) completed questionnaires.

Since data analysis, the Australian Diabetes Educators' Association has published a Resource Directory which lists 72 nurses and dietitians and 14 part-time podiatrists working as diabetes educators in New South Wales (ADEA, 1988 [b]). Assuming this directory is reasonably accurate, approximately half the diabetes educators working in this State have responded to either the pilot or main study. The following analysis describes responses to the survey.
Results and discussion

What categories of health professionals are actively involved in the education of diabetic patients?

Table 1: Demographic Data

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Sex</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>5</td>
<td>Male</td>
<td>3</td>
</tr>
<tr>
<td>30-39</td>
<td>11</td>
<td>Female</td>
<td>21</td>
</tr>
<tr>
<td>40-49</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-65</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unanswered</td>
<td>1</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Profession</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietitian</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Podiatrist</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>18</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of Clinical Practice</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital less than 100 beds</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Hospital 101-200 beds</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Hospital 201 or more beds</td>
<td>11</td>
<td>46</td>
</tr>
<tr>
<td>Community setting (including stabilisation centre)</td>
<td>11</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>100</td>
</tr>
</tbody>
</table>

Those subjects with pre-service training in nursing are graduates from certificate level programmes undertaken in hospital schools of nursing accredited by the Nurses' Registration Board. The majority of nurses have supplemented their basic preparation with a variety of post-graduate courses, some of which are related to their role as diabetes educator, for example, post graduate qualifications in education, while others, for example, midwifery, are not. Dietitians have undergraduate degrees from tertiary institutions supported in some instances by additional qualifications which may or may not be related to diabetes and education.
What training do diabetes educators have?

As Table 2 demonstrates, only 2 respondents have formal qualifications in education. Six (25%) respondents have completed or are enrolled in tertiary studies at a post graduate level.

Table 2: Formal Professional Qualifications

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwifery Certificate</td>
<td>4</td>
</tr>
<tr>
<td>Graduate Diploma - Nutrition and Dietetics</td>
<td>2</td>
</tr>
<tr>
<td>Graduate Diploma in Education</td>
<td>2</td>
</tr>
<tr>
<td>Accident &amp; Emergency Certificate</td>
<td>2</td>
</tr>
<tr>
<td>Community Health Certificate</td>
<td>2</td>
</tr>
<tr>
<td>Geriatric Certificate</td>
<td>1</td>
</tr>
<tr>
<td>Psychiatric Certificate</td>
<td>1</td>
</tr>
<tr>
<td>Mothercraft Certificate</td>
<td>1</td>
</tr>
<tr>
<td>Intensive Care Certificate</td>
<td>1</td>
</tr>
<tr>
<td>Nil</td>
<td>9</td>
</tr>
</tbody>
</table>

n = 24

A variety of staff development and inservice programmes had been undertaken by respondents. With one exception, respondents had completed inservice programmes focusing on diabetes care (Table 3).

Table 3: Summary of Staff Development and Inservice Programmes Undertaken by Respondents

<table>
<thead>
<tr>
<th>Skill</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Care</td>
<td>23</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>19</td>
</tr>
<tr>
<td>Educational Techniques</td>
<td>16</td>
</tr>
<tr>
<td>Counselling Skills</td>
<td>15</td>
</tr>
<tr>
<td>Organisational Management Skills</td>
<td>14</td>
</tr>
<tr>
<td>Programme Design</td>
<td>9</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>1</td>
</tr>
<tr>
<td>Review &amp; Evaluation</td>
<td>1</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

n = 24
Respondents expressed varying degrees of satisfaction with these courses (Table 4). Of the eight respondents without formal training in the teaching/learning process (Group B), only three had attended inservice courses with a focus on educational techniques and programme design. This omission of educational content in training, which could be due to either lack of opportunity or lack of interest, is cause for concern given the educational focus of this role. International research has demonstrated lack of training opportunities (Prigg, 1982), and an absence of institutional commitment to ensuring educators undertake this training (Essig & Thielen, 1982). This situation could also exist in Australia.

Table 4: Level of Satisfaction with Programme Attended

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Highly</td>
</tr>
<tr>
<td>Diabetes Care</td>
<td>13</td>
</tr>
<tr>
<td>Educational Techniques</td>
<td>7</td>
</tr>
<tr>
<td>Course Design</td>
<td>3</td>
</tr>
<tr>
<td>Management Skills</td>
<td>6</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>6</td>
</tr>
<tr>
<td>Counselling Skills</td>
<td>4</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>1</td>
</tr>
<tr>
<td>Review and Evaluation</td>
<td>1</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

n = 24

Inservice and staff development programmes focusing on diabetes care were considered to be highly satisfactory by the majority of respondents. These programmes include study days specific to diabetes care organised by professional groups and as such differ from the inservice programmes run by individual institutions as part of the general inservice programme for registered nurses. While it is not possible to speculate with any confidence about the expressed level of satisfaction with programmes which focused on educational techniques, counselling and communication, two concerns could be raised. The first concern relates to the perceived effectiveness of the programme, and the second relates to the small number of participants taking part in these important aspects of
diabetes education; counselling 13 (54%), educational techniques 15 (63%), and communication skills 17 (75%). Other studies have concluded that inadequate role preparation causes widespread deficiencies in teaching skills resulting in failure to clarify objectives, actively involve patients in the educational process, evaluate the instructional impact based on patient adherence to educational goals, and help patients follow treatment (Lorenz, 1987; Redman, 1988).

For analysis of the remaining questions, responses were separated into two groups according to the answer given for question 4(a), "Have you received instruction in the teaching/learning process?" The 16 (67%) respondents who had received instruction on the teaching/learning process constitute Group A, eight (33%) respondents who had not received instruction, Group B. All respondents who had received instruction on the teaching/learning process as part of a course for diabetes educators indicated a desire to undertake further study in educational techniques and programme planning.

Table 5 identifies those respondents who have completed a course for diabetes educators. Six (37%) respondents from Group A indicated they had obtained their instruction on the teaching/learning process as part of this programme. This is interesting because, although Group B represents respondents who have not had training in the teaching/learning process, 1 respondent indicated that a course for diabetes educators had been completed prior to appointment and two respondents indicated that they had completed a course subsequent to their appointments. This apparent contradiction could be due to inconsistent course content or participant failure to comprehend the content.
Table 5: Role Preparation.

COMPLETED A COURSE FOR DIABETES EDUCATION

<table>
<thead>
<tr>
<th>Prior to Appointment</th>
<th>Subsequent to Appointment</th>
<th>No Formal Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>Group B</td>
<td>Group A</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

Group A n=16
Group B n=8

Of those respondents who did complete a programme for diabetes educators, five believe the programme at least partly prepared them for their education functions however, 11 felt the programme provided inadequate preparation.

One respondent (Group B) indicated that the level of clinical responsibility was often beyond his/her level of expertise, seven indicated the situation occasionally arises, while 16 are rarely in this position (Table 6).

Table 6: Level of Clinical Responsibility.

<table>
<thead>
<tr>
<th>OFTEN</th>
<th>OCCASIONALLY</th>
<th>RARELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>Group B</td>
<td>Group A</td>
</tr>
<tr>
<td>-</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Group A n =16
Group B n = 8
It should be pointed out that at the time these courses were being undertaken by these respondents the content of courses did not follow a common curriculum. The common curriculum of seven weeks duration was introduced in 1989.

What resources do diabetes educators have to facilitate their work?

Diabetes educators are working in clinical settings supported by a range of resources. Analysis of results identifies two distinct groups. There are those diabetes educators who work as members of health teams located in large established Diabetes Education Centres supported by a variety of resources. Other diabetes educators work alone, often community based or in institutions of less than 200 beds. These educators depend largely upon their own knowledge and experiences and have limited access to libraries and other health professionals.

Twelve (75%) respondents in Group A reported satisfactory or excellent access to a well equipped library, and 15 (94%) describe opportunities to discuss problems with colleagues as being either readily available or satisfactory. While 4 (50%) respondents in Group B also indicate satisfactory opportunity for discussions with colleagues, only one respondent indicated his/her research literature and reference resources to be excellent, three satisfactory and four (50%) have only limited access. Half this group also indicated that their opportunity to discuss professional issues with colleagues was limited. All respondents are able to consult a physician/endocrinologist and a dietitian (Table 7).
Table 7: Resources Available to Facilitate the Work of Diabetes Educators

<table>
<thead>
<tr>
<th>Resource</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well equipped library</td>
<td>12</td>
</tr>
<tr>
<td>Physician/endocrinologist</td>
<td>16</td>
</tr>
<tr>
<td>Dietitian</td>
<td>16</td>
</tr>
<tr>
<td>Nurse educators (lecturers in nursing programmes)</td>
<td>8</td>
</tr>
<tr>
<td>Peers with qualifications in diabetes education</td>
<td>15</td>
</tr>
<tr>
<td>Peers with extensive experience in diabetes education</td>
<td>12</td>
</tr>
<tr>
<td>Counsellors for consultation</td>
<td>8</td>
</tr>
<tr>
<td>Counsellors for client interview</td>
<td>9</td>
</tr>
<tr>
<td>Podiatrists</td>
<td>14</td>
</tr>
<tr>
<td>Ophthalmologists</td>
<td>11</td>
</tr>
<tr>
<td>Audio Visual Department</td>
<td>1</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>1</td>
</tr>
<tr>
<td>Social worker</td>
<td>1</td>
</tr>
<tr>
<td>Occupational Therapist</td>
<td>1</td>
</tr>
<tr>
<td>University Lecturer</td>
<td>1</td>
</tr>
<tr>
<td>Other medical specialists</td>
<td>1</td>
</tr>
<tr>
<td>Contact with metropolitan centre with all facilities</td>
<td>-</td>
</tr>
</tbody>
</table>

Group A n = 16
Group B n = 8

Do diabetes educators incorporate principles of teaching and learning into their programme?

Six (75%) of respondents from Group B indicate they conduct patient education on a one-to-one basis only. The remaining 18 respondents to this survey conduct education in groups and individually. Educators who reported themselves to be successful in their endeavours to change the behaviours of diabetic patients are well aware of individual preferences for particular teaching strategies and attempt to provide a variety of techniques complemented and reinforced by a diversity of teaching aids. Responses indicate that, as one could reasonably expect to be the case, educators who have received instruction on how to teach (Group A) use a more extensive selection of teaching aids than those who have not (Table 8).
All respondents indicate that they set goals for education in consultation with the patient, and his family if necessary, that are investigated in the event of non-achievement.

**Table 8: Teaching Aids Used**

<table>
<thead>
<tr>
<th>Frequency To Some Extent</th>
<th>Very Intensely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>A</td>
</tr>
<tr>
<td>Films and videos</td>
<td>4</td>
</tr>
<tr>
<td>Charts</td>
<td>10</td>
</tr>
<tr>
<td>Working Sheets</td>
<td>9</td>
</tr>
<tr>
<td>Models</td>
<td>8</td>
</tr>
<tr>
<td>Slide-tape sequence</td>
<td>6</td>
</tr>
<tr>
<td>Overheads</td>
<td>1</td>
</tr>
<tr>
<td>Games</td>
<td>2</td>
</tr>
<tr>
<td>Demonstrations</td>
<td>2</td>
</tr>
<tr>
<td>Literature</td>
<td>-</td>
</tr>
<tr>
<td>Take home exercises</td>
<td>1</td>
</tr>
<tr>
<td>White board</td>
<td>1</td>
</tr>
<tr>
<td>Diagrams</td>
<td>2</td>
</tr>
<tr>
<td>Audio tapes</td>
<td>-</td>
</tr>
<tr>
<td>Problem solving</td>
<td>2</td>
</tr>
<tr>
<td>Lecturer</td>
<td>-</td>
</tr>
</tbody>
</table>

**Group A n = 16**
**Group B n = 8**

Differences between the two groups are also evident in the teaching activities used, reflecting the educational setting and skills of the educator (Table 9). While respondents in both groups utilize individual instruction and demonstration-practice, respondents in Group A also indicated more frequent utilization of group discussion, role-play and teacher-centered lecturing than respondents in Group B. Of all respondents only two, both in Group A, indicated they use problem solving, a teaching activity well suited to diabetes management which requires patients to make constant decisions in an effort to maintain blood sugar levels within physiological limits.
Table 9: Teaching Activities Used

<table>
<thead>
<tr>
<th>Activity</th>
<th>To Some Extent</th>
<th>Very Intensely</th>
<th>Group A</th>
<th>Group B</th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher lecturing</td>
<td>9</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group discussion</td>
<td>1</td>
<td>2</td>
<td>13</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual instruction</td>
<td>2</td>
<td>3</td>
<td>13</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration/practice</td>
<td>3</td>
<td>2</td>
<td>12</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended readings</td>
<td>8</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role play</td>
<td>10</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem solving</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Group A n = 16
Group B n = 8

Evaluation of the educator, the programme, and the patients' outcomes against preset objectives are important aspects of diabetes education. While all respondents indicate they set clear goals for patient education, the methods used to encourage patients to identify their needs differ between groups (Table 10).

Table 10: Goal Setting Practices

<table>
<thead>
<tr>
<th>Practice</th>
<th>Routinely</th>
<th>Sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish goals for patient education</td>
<td>15 A 7 B</td>
<td>1 A 2 B</td>
<td>-</td>
</tr>
<tr>
<td>Encourage patients to identify needs</td>
<td>15 A 5 B</td>
<td>1 A 2 B</td>
<td>-</td>
</tr>
<tr>
<td>Negotiate goals</td>
<td>10 A 3 B</td>
<td>5 A 3 B</td>
<td>1</td>
</tr>
<tr>
<td>Contract for achievement of goals</td>
<td>4 A 1 B</td>
<td>11 A 3 B</td>
<td>1</td>
</tr>
<tr>
<td>Evaluate own success in helping patients</td>
<td>12 A 5  B</td>
<td>4 A 2 B</td>
<td>-</td>
</tr>
</tbody>
</table>

Group A n = 16
Group B n = 8
Respondents in Group A, with one exception, routinely encourage patients to identify their own needs, while of those respondents in Group B, 5 (63%) do so routinely, 2 (25%) occasionally, and 1 (13%) not at all.

Of Group A, 10 (63%) routinely negotiate goals with patients, 5 (31%) do so occasionally, and 1 (6%) not at all. In comparison, 3 (38%) of respondents in Group B routinely negotiate, 3(38%) do so occasionally, and 3 (38%) not at all. This trend is repeated in the practice of contracting for progress towards goals. Of respondents in Group A, 4 (25%) routinely contract, 11 (69%) do so occasionally, and 1 (6%) does not implement this method of behaviour modification. Only 1 (13%) respondent in Group B routinely commits patients to a contract, 3 (38%) do so occasionally, and 5 (63%) do not contract for change.

Twelve respondents (75%) in Group A indicate that they evaluate their success in helping patients often, and 4 (25%) indicated occasionally. Five (63%) respondents in Group B evaluate their success often, 2, (25%) occasionally , and 1 not at all.

Table 11: Evaluation of Patient Education

<table>
<thead>
<tr>
<th></th>
<th>To Some Extent</th>
<th>Very Intensely</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group A</td>
<td>Group B</td>
</tr>
<tr>
<td>Pre-test</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Post-test</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Standardised</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>evaluation protocols</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>* Informal methods</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

* Not all respondents answered this question.

Group A n = 16
Group B n = 8
Standardised evaluation protocols utilizing a combination of written and oral tests have been adopted by 14 (88%) respondents in Group A and 4 (50%) in Group B. Evaluation of patient learning using informal methods (unspecified) has been adopted by 14 (88%) of respondents in Group A and 7 (88%) of Group B.

Achievement of psychomotor skills is as significant in diabetes management as is the achievement of cognitive objectives. The majority of respondents in both groups indicate they routinely assess patients before and after instruction to test for acquisition of skills and knowledge.

Fourteen (88%) respondents in Group A evaluate patient progress throughout the programme as well as at the conclusion; 2 (13%) evaluate as an ongoing process only. Three (38%) respondents in Group B indicated they evaluate patient progress occasionally, 2 (25%) evaluate as an ongoing process, 2 (25%) evaluate at the conclusion of education only, while 1 (13%) respondent does not evaluate at all. This must be considered, bearing in mind that 5 (63%) of Group B only educate on a one-to-one basis, therefore, the opportunity to evaluate at the conclusion of an education programme may not arise (Table 12).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>At conclusion of programme only</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>As an ongoing process</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Both</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>No evaluation</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Table 12: Evaluation of Outcomes**

Group A n = 16
Group B n = 8
What information and skills do diabetes educators need to become more effective?

The number of respondents in Group A indicating a desire for further study in a diabetes related topic was quite high (Table 13).

Nine (56%) identified pathophysiology of diabetes, 11 (69%) diabetes management and 6 (38%) indicated all areas; unexpected results from a group whose mean experience in the role is 3.6 years, who have completed a course for Diabetes Educators, and who, in this study, tended to be working in a situation supported by research and resource facilities. Three (38%) respondents in Group B also indicated a desire for further study in all areas identified.

There were two respondents in Group B who did not indicate either educational techniques or programme planning as areas for further study. The fact that an individual performing an educational role has not had instruction in the principles of teaching and learning and does not indicate a desire to do so, should be a concern for A.D.E.A. which, at this time, is involved in achieving professional recognition for members.

All respondents to the survey except for two in group A, indicated a need for further instruction in at least one of the following: counselling and educational techniques, communication skills and programme planning. All respondents, except for 3 in Group A and 2 in Group B, would like to study research methods further. Other areas identified for further instruction included time management, goal setting and evaluation.
Table 13: Topics Identified by Respondents As Desirable for Further Study

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme planning</td>
<td>13</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Research methods</td>
<td>13</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Diabetes management</td>
<td>11</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Educational techniques</td>
<td>10</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Management skills</td>
<td>10</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Pathophysiology of diabetes</td>
<td>9</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Communication skills</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Counselling techniques</td>
<td>7</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Time management</td>
<td>1</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Goal setting</td>
<td>1</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Evaluation</td>
<td>1</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Group A n = 16
Group B n = 8

What aspects of the role are satisfying?

Respondents were asked to describe those aspects of the role they find professionally satisfying. The following aspects were cited. Assisting patients to regain and maintain their optimum health status and a positive attitude; opportunities for research; autonomy of practice; creativity in individual instruction and group education; working as part of a team; encouraging staff development; achieving personal and team objectives; and encouraging a health promotion model for patient care.

These results indicate that achievement and high self esteem appear to be important for this group of health professionals in spite of problems associated with inadequate role preparation and, in some cases, limited opportunities for inservice and limited access to resources.

Diabetes educators also report disincentives or disadvantages in their roles. Some problem areas include: constraints imposed by time, finance, and patient numbers; limited resources (material and human); isolation; lack of professional education, professional review and quality assurance; limited clerical and computer backup; communications
breakdown between ward areas and fellow diabetes educators; role obtrusiveness by other health professionals; and the failure of bodies such as the Nurses' Education Board to identify and remunerate diabetes educators as a professional group. For several respondents, loss of general nursing expertise, and working within a narrow aspect of diabetes care (with non-insulin dependent diabetics) were disadvantages. The nature of specialisation within one facet of a profession implies narrowing the field of practice, but increasing the depth of professional skills and knowledge. The perceived disadvantage could be associated with a yet to be decided professional direction. Once again, the theme running through the expressed disadvantages signifies a desire for recognised professional status which implies opportunities for achievement and career advancement, an obligation of quality service and accountability of members.

CONCLUSION

The results of this survey generate several areas of concern for diabetes educators in general and in particular for those charged with formulating A.D.E.A.'s future direction and policy development. The number of respondents who indicated that they had not completed a course for diabetes educators and not received instruction in the principles of teaching and learning must concern health care administrators and health professionals. The number of respondents who indicated they have completed a course but want more instruction on education related areas could be a consequence of the design and content of the courses. The courses undertaken were concentrated bouts of instruction over one or two weeks, designed to meet the immediate service needs of health care facilities and diabetes educators. The number of respondents who indicated that the level of clinical responsibility expected of them was either occasionally or often too high may also be a reflection of the inadequacy of these courses.

Quite obviously, not all education takes place in large, well equipped Diabetes Education Centres. Diabetes educators work in an environment requiring integration of
theoretical thinking, research and creative practice. Curricula designed for diabetes educators require a depth and breadth of study that will allow students to obtain the skills necessary to integrate medical aspects of diabetes with communication and problem solving skills, to identify patients' deficits, be sensitive to changes, correctly interpret, or at least identify cues and inferences from patients and/or their families, and translate this information into the most appropriate management plan for each patient. Results of this survey do not indicate this to be the case amongst currently practising diabetes educators.
B) DIABETIC PATIENTS’ ATTITUDINAL QUESTIONNAIRE

Subjects and Response Rate

One hundred questionnaires were sent to two city and two country Diabetes Education Centres with a return rate of 41%. Diabetes Educators at these centres were also taking part in the Diabetes Educators' Resource Survey so they were familiar with the research and aware of the purpose of this survey.

This return rate, which is lower than expected, could be explained in part by the method of questionnaire distribution. Diabetes educators were asked to distribute questionnaires to insulin and non-insulin dependent patients attending centres for individual and group education. Respondents were asked to return questionnaires directly to the researcher. While this procedure maintains anonymity of patients, the importance of returning survey forms may not be obvious to them, and follow-up is not possible.

While the return rate may have been improved had respondents been asked to complete questionnaires before leaving the education setting so that completed questionnaires could be returned to the researcher by diabetes educators involved, the fact that educators would have access to completed questionnaires may have influenced responses. The number of questionnaires not distributed to patients is also not known. Requests were made for uncompleted questionnaires to be returned to the researcher, and although no questionnaires were returned, the fact that some remained undistributed cannot be excluded.
Results and Discussion

Twenty three (56%) respondents were male and 18 (44%) female, of whom 12 (29%) are treated with insulin, 14 (34%) take tablets, 2 (5%) indicate insulin and tablets and 13 (32%) follow a diet only. This survey aimed to elicit patients' perceptions of the effectiveness of their educators' communication, teaching skills and evaluation techniques.

Although 3 (7%) respondents indicated strongly negative attitudes toward their educators, with one exception, all agreed that their knowledge about diabetes was increasing despite those negative feelings. Three other (7%) respondents indicated that although their knowledge was increasing, the instruction they were receiving was not helping them understand diabetes. Their alternative sources of information were not identified.

Five (12%) respondents indicated a preference for education on an individual level with educators, 8 (20%) preferred groups and 27 (66%) preferred to combine group and individual instruction. Thirty six (88%) respondents indicated they had participated in a group education programme, of whom one indicated a preference for individual instruction.

Communication Skills

Although half the diabetes educators indicated a desire for further instruction in communication and counselling skills, patients indicated a high degree of satisfaction with their educators in these areas.

All but 3 (7%) respondents indicated that their educators are often or always easy to talk to, answer questions to their satisfaction, encourage them to discuss problems,
clearly explain diabetes and keep patients informed of their progress.

Thirty (73%) respondents indicated that they never keep information from their educators, 3 (7%) seldom do, although 6 (15%) always do. Suprisingly, of the 3 respondents who indicated negative feelings towards their educators, none indicated they always keep information from their educators. All respondents except 2 (5%) feel comfortable talking to their educator, enjoy visits and would recommend their educators to other diabetics.

Teaching Skills

With one exception respondents indicated that their knowledge of diabetes is increasing. Thirty six (88%) respondents indicated that their educators show them the necessary skills as often as required, 34 (83%) are asked by educators to demonstrate psychomotor skills such as finger prick technique for blood sugar estimation and 32 (78%) are asked to list their needs.

Individuals process information at different rates and prefer different learning techniques. When asked to identify how their educators overcame these individual differences, 29 (71%) indicated that educators reintroduce information in a different way and 20 (49%) indicated educators reintroduce the same information again in the future. Although these results could be interpreted as indicating that diabetes educators give limited attention to remedial teaching, only 5 (12%) respondents indicated that they need to ask the same question each time they see their educator.

One of the goals of diabetes education is to provide support to the client and his family. A number of diabetes educators encourage clients to bring a support person to appointments and education programmes. This practice has evolved from the recognition that the restrictions and considerations imposed upon diabetes sufferers by the disease
affect their family, work and leisure activities. Furthermore, involving a 'significant other' in patient education ensures that somebody with whom the client has close contact is as well versed as the client in the problems of diabetes. Thirty three (80%) respondents indicate that they are always encouraged to bring someone to appointments with educators and to education programmes and only 4 (10%) indicate that they are never encouraged to bring a support person.

Evaluation

Respondents were asked to indicate their involvement in establishing and reviewing their education and evaluating their programmes and their progress. Thirty six (88%) indicate that they participate often or always in establishing and reviewing their programmes and 32 (78%) indicate that they often or always complete knowledge tests; 6 (15%) indicate that they have never been asked to complete knowledge tests. When asked how often they are asked to evaluate their programmes, 19 (46%) indicated always, 9 (22%) often, 5 (12%) sometimes, 1 (2%) seldom and 3 (7%) not at all.

Close examination of questionnaires reveals some interesting trends. However, due to the small sample, generalisation to all patients/educator interactions is not possible. In this survey respondents who consistently indicated a perfect response (always or not at all as was appropriate) were diagnosed for 1 year or less at the time the questionnaire was completed. Respondents indicating least satisfaction were amongst those who had been diagnosed for longest.

Comparison of survey questionnaires of educators and clients attending the same clinics indicated that evaluation practices, which vary from centre to centre, are influenced by several factors; a) exposure of educators to the teaching/learning process; b) size of the institution; c) usual method of patient education. Educators appear to either involve clients in establishing their programmes and the evaluation process or neglect to set
objectives and evaluate progress altogether. Educators working at larger centres endeavour to ensure that, in the absence of contraindications, clients undertake a group education programme as soon as possible after diagnosis. This group of educators, who appear to have the advantage of both educational preparation and resources, also tend to evaluate, albeit at the end of the programme, more than those at smaller centres where educators and clients interact on an individual basis.

Although all but one respondent indicated that their knowledge of diabetes was increasing, this increase in knowledge was not always attributed to the skills of the educator. Those patients who indicated this to be the case also indicated that the knowledge gained during education does not necessarily help them maintain their blood sugar levels within physiological levels.

Studies suggest that patient education has therapeutic value for patients, however, the reported effects of education upon diabetes control is inconsistent across studies (Bloomgarden et al. 1987, Glasgow et al. 1989; Paulozzi et al. 1984). The fact that many diabetes educators are inadequately trained for their educational functions and the effects of this upon patient outcomes has also been reported (Lorenz, 1987).

CONCLUSION

This survey demonstrated that the majority of respondents are satisfied with the education they receive. However, while consumer satisfaction is important, a more critical variable is metabolic control which, although not measured in this study, has been shown by other studies to remain unimproved following education (Campbell et al. 1984; Bloomgarden et al. 1987).

While patient satisfaction with diabetes educators appears from this survey to be high, little can be concluded from it since the response rate was so poor.
Several sources of bias could be reflected in the expressed general satisfaction. Patients sufficiently motivated to respond could also be motivated to adhere to management regimens, and in so doing, experience fewer problems than noncompliant patients. Motivation to comply with management regimens will also result in reinforcement from educators. Reinforcement enhances motivation which in turn, generates high levels of self-esteem for the patient and satisfaction with education. Another factor that could stimulate a sense of patient satisfaction which has not been addressed in this study is the number of educators each patient has contact with. Those who constantly see the same educator, or whose learning experiences are confined to diabetes education, have few opportunities to compare skills of individual educators, while in instances where a client sees a variety of educators, collectively these educators could satisfactorily meet client needs.

Results of the patient survey, notwithstanding evidence from the educators themselves and from referring physicians, suggests the need for improved training.
C) PHYSICIAN'S/ENDOCRINOLOGISTS INTERVIEW

Results and Discussion

a) Do you believe that virtually every diabetic patient should have the opportunity of a referral to a diabetes educator and/or diabetes education centre?

While all doctors interviewed believe diabetes education to be an important component of total patient care, the need to assess all patients individually prior to making a recommendation about the most appropriate setting for education was also emphasised. Referral decisions are made considering access to a Diabetes Education Centre, centre policies controlling the educational format (group or individual), follow-up and review criteria, individual learning needs and patient preferences. The experiences of one physician attached to a paediatric hospital indicate that parents of diabetic children occasionally choose to receive education from a physician in preference to diabetes educators.

While the extent to which these factors exclude patients from education is unknown, the lack of fundamental health service planning has been cited as an impediment to effective patient education (Beaven et al. 1988), as has a lack of organisational planning (Kelley, 1983; Hamilton 1984) and evaluation skills of educators (Graber et al. 1977; Lane & Evans, 1979); factors exacerbated by a general lack of training amongst patient educators (Prigg, 1982). Among the prevalent diabetes population, it has been estimated that attendance at the specialist educational services has been as low as 3-4% and seldom more that 25-30% (Beavan et al. 1988).

Although the location of a Diabetes Education Centre is beyond the control of educators, it is the function of educators to evaluate centre policies and procedures and initiate strategies to improve patient access to services.
b) *Should most patients be encouraged to have continuing access to a diabetes educator to discuss everyday problems as they arise?*

All doctors considered continual, consistent followup to be most important to the well being of the diabetic patient. However, concern was expressed by several general practitioners that they may lose contact with patients encouraged to have this amount of contact with diabetes educators. These practitioners did not directly indicate this to be a cause of practitioner non-referral.

General practitioners are traditionally the first point of contact for patients and are largely responsible for determining the nature of ongoing diabetes care. Practitioner non-referral can become a grave problem for patients with diabetes, and, although little literature exists to indicate patterns of diabetes care in general practice, studies have indicated that low standards of care do, in some instances, increase the risk and severity of complications (Beavan, 1988; Hayes & Harries, 1984).

c) *Ideally, what do you expect the diabetes educator can do that you, in the context of your practice commitments, are unable to do?*

Respondents believe there are important differences between the functions of the doctor and educator and the management role assumed by each. This view is supported by research which indicates that patients consult a physician about problems relating to the medical management of their diabetes and attend the educator for general education and review (Tilley et al. 1987).

According to the doctors interviewed, time is a major consideration; educators have more time to spend with patients. In addition five recognised that few doctors have developed skills in educational and counselling techniques; a view also expressed in the literature (Beavan et al. 1988; Hayes & Harries, 1984). Each of the physicians
expressing this belief is closely associated with a Diabetes Education Centre which may, I believe, contribute to their acknowledgement of the specialised functions of diabetes educators.

d) What characteristics would you nominate which distinguish the better diabetes educators from their colleagues?

Ideal diabetes educators are described as being empathetic, flexible, enthusiastic, perceptive, possessing a sound knowledge of diabetes and utilizing a problem solving approach to education. Skills in education, and the ability to adapt teaching to individual patients by exhibiting a broad range of skills in dealing with children and adults are also valued.

To demonstrate these skills diabetes educators are required to be familiar with behavioural and biological sciences, and principles of teaching and learning. While preservice courses may provide health professionals with sufficient knowledge in the biological sciences, few address the behavioural sciences and principles of education with sufficient emphasis to allow diabetes educators to include these skills in their patient teaching (Lorenz, 1986; 1987; 1989).

e) What major factors would you consider essential to include in a formal postgraduate diabetes education programme?

Respondents identified content areas aligned with the skills and knowledge demonstrated by those diabetes educators which they considered to be exemplary models for their colleagues. Counselling, communication, and 'how to teach' are content areas identified by all interviewees. Pathophysiology and management of diabetes were also identified by all respondents. Physicians with experience in group education identified group dynamics and audiovisual techniques as important; skills that are often lacking in
educators. Methods of behaviour change, stress management and coping mechanisms were also identified for inclusion in an education programme.

f) *Have you noticed recurrent problem areas after patients have attended an education programme?*

All those interviewed agreed that adherence to management routines is a problem for the majority of patients.

Specifically, two physicians who attend different centres identified knowledge deficits in nutrition, acknowledged to be the most difficult area for patients to understand. Unexpected situations also generate self-management problems for diabetics; sick days were identified as an example. In general patients tend to bring problems to their doctors as they arise including those previously covered during education.

A diversity of teaching aids and strategies with applications to identified areas of knowledge deficit are available to diabetes educators skilled in their use. A variety of written information, translated into many languages, is available covering all areas of diabetes care. Audio tapes assist the visually impaired, while video tapes, professionally produced and sponsored by commercial enterprises with an interest in diabetes care, are readily available for patient use.

Analysis of patient problems in the past have identified ineffective or inappropriate teaching practices arising from a lack of preparation for a teaching role, as a major reason patients fail to achieve education goals (Lorenz, 1987; Resler, 1982).
g) Are there any groups of patients whom you do not specifically refer to a Diabetes Education Centre? Why?

In this study reluctance on the part of the patient was the major reason cited by doctors for patient non-referral. These doctors also indicated that clinical management for elderly patients, many of whom are non-insulin dependent, does not need to be as intensive as the clinical management of younger patients. Respondents generally believe that adequate education can be provided for these patients within routine medical consultations.

Language barriers and learning difficulties also preclude some patients from group programmes; individual consultations with educators are sought for these patients when and where possible.

Other studies have identified practitioner non-referral, limited entry to programmes, lack of applicability of the diabetes education programme, financial barriers and language difficulties as factors contributing to low attendance rates (Chapko, Norman, Bell-Hart et al., 1987).

In one six month period this researcher found 34% of patients having their first consultation with diabetes educators and/or dietitians had been diagnosed for longer than 1 year (range 18 months to 26 years). The majority of these had not sought routine outpatient consultation, rather, the contact with diabetes educators was the result of hospitalisation. The most common reason given for previous non-attendance was the failure of doctors to refer patients to this service. This research would indicate a considerable number of diabetic patients, including patients aged less than 60 years, some of whom were insulin-dependent, do not come into contact with an educator until an incidental hospital admission (Griffiths, Moses, & Chong 1989).
The referral practices of medical practitioners, particularly those in general practice, and the implications of these practices for the continuing care of their diabetic patients requires further study.

CONCLUSION

Results of this study indicate that if the goal of the Australian Diabetes Foundation of improved diabetes care by the year 2000 is to be achieved, major changes will be required within the health care system (Australian Diabetes Foundation, 1987). The role of health professionals involved in diabetes care requires clarification, after which education programmes, developed from their role descriptions can be developed, implemented and evaluated. Revision of programmes for diabetes educators should be accompanied by a revision of curricula implemented by medical schools so that doctors are aware of the potential contribution of diabetes education. To ensure standards are maintained a system of accreditation for centres, educators and programmes (patient and professional) is required. Responses to this interview suggest that specialist physicians are more aware of the complexities of diabetes education and the role and functions of diabetes educators than are general practitioners.
SECTION D

DEFINING CONTENT AND PROCESS
CHAPTER 8

COMPETENCIES FOR AUSTRALIAN DIABETES EDUCATORS

INTRODUCTION
EXTENDING THE OFFICIAL ROLE DESCRIPTION
CONCLUSION
INTRODUCTION

A.D.E.A. has made significant moves towards improving the practice of diabetes educators. The National Educators' Course, role description and competencies (A.D.E.A., 1987, 1988), provide diabetes educators with identifiable foundations for practice that have not previously existed. These strategies are intended to improve metabolic control for patients with diabetes and the professional status of diabetes educators. While the National Educators' Course is a vast improvement on previous programmes for diabetes educators, policies being adopted at this time must take into account the practice needs of diabetes educators at least in the medium term.

Responses from diabetes educators surveyed indicate that basic educational strategies such as documented goal setting, action plans and evaluations, are not standard procedures. While time constraints could be implicated in part, absence of such documentation could also be due to limited opportunities to learn these skills, lack of motivation, quality assurance, and professional accountability. Practices also vary between centres. If identified competencies are to become part of the clinical practice of diabetes educators, extensive training, integrating theory and practice, must be made available to all diabetes educators.

The literature cited in Chapter 9 demonstrates that, to date, the benchmark for diabetes education, patient outcomes, measured in terms of metabolic control, has not indicated as much success as professionals in the field would like. Theoretical foundations of diabetes education also presented in Chapter 9 suggest a depth and breadth of professional preparation which has not yet been met by training programmes for diabetes educators. If diabetes educators are to be required to demonstrate these skills considerable emphasis must be given to the teaching/learning process, the theory of behaviour change, and the concept of professionalism during their professional preparation. The most effective programmes will be those that take theory to the clinical
setting, demonstrating fully integrated theory and practice components; theory embedded in practice.

EXTENDING THE OFFICIAL ROLE DESCRIPTION

To accommodate the needs of diabetes educators in the future as outlined in earlier chapters of this thesis, the minimum level of competence and skills identified by A.D.E.A. has been expanded by this author to include areas such as appreciative, analysis and personal skills. The expanded list of competencies is presented in Table 15. The achievement of these skills would allow more effective patient care, the professional development of diabetes educators and eventually, professional recognition. Diabetes educators who develop and practice the competencies and apply them to the clinical setting would be fulfilling the role description developed by this thesis and summarised in Table 14.

TABLE 14. Role Description for Diabetes Educators

- Recognise the individual needs of diabetic patients and their families.
- Provide individualised holistic diabetes education to patient and their family.
- Function as a referral, resource and education facility for diabetics, their families and the community.
- Initiate and maintain community diabetes awareness utilizing the media and public forum.
- Recognise the multi-cultural nature of Australian society and the implication of cultural beliefs and values upon the management of diabetes.
- Facilitate the professional development of diabetes educators and other health professionals by providing inservice education and encouraging participation at professional forums.
- Undertake research with particular emphasis upon developments in education for patients and health professionals.
- In their capacity as health educators, act as role models for healthy lifestyles.
<table>
<thead>
<tr>
<th>Technical Skills</th>
<th>Analysis Skills</th>
<th>Appreciative Skills</th>
<th>Instrumental Skills</th>
<th>Personal &amp; Interpersonal Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being able to demonstrate knowledge of the pathophysiology of diabetes</td>
<td>Being able to assess the suitability of learning experiences, resources and current information</td>
<td>Demonstrate an awareness of and an ability to respond to the magnitude of lifestyle changes associated with diabetes</td>
<td>Being able to initiate and organize innovative forms of group activities</td>
<td>Being able to demonstrate sensitivity to individual needs</td>
</tr>
<tr>
<td>- knowledge of a broad range of management strategies</td>
<td>- utilize needs assessment processes</td>
<td>- diverse cultures, value frameworks and differential needs of diabetics</td>
<td>- leadership training</td>
<td>- exemplar role for other health professionals</td>
</tr>
<tr>
<td>- knowledge of learning and behavioural theories and changes</td>
<td>- assess patient performance and adapt programs accordingly</td>
<td>- current trends in the professional area</td>
<td>- resource construction</td>
<td>- tolerance to ambiguity and uncertainty</td>
</tr>
<tr>
<td>- ability to utilize a variety of learning experiences in individual and group situations</td>
<td>- assess own performance</td>
<td>- varied approaches to program design and teaching</td>
<td>- policy statements and implementation</td>
<td>- leadership</td>
</tr>
<tr>
<td>- evaluation procedures</td>
<td></td>
<td>- varied learning environments</td>
<td>- professional development</td>
<td>- creativity</td>
</tr>
<tr>
<td>- organisation skills for total programming</td>
<td></td>
<td></td>
<td>- the enlistment of community resources</td>
<td>- self-esteem and positive self-image</td>
</tr>
<tr>
<td>- development of a specific body of knowledge from research and publication</td>
<td></td>
<td></td>
<td>- meetings</td>
<td>- involvement in professional organisations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- enthusiasm for the profession</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- positive attitude</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- tolerance of others</td>
</tr>
</tbody>
</table>

Table 15. Competencies For Diabetes Educators
Diabetes educators demonstrating these competencies could function as generalist practitioners. The subjects, outlined on page 13 and described in detail from pages 16-40 of the Curriculum Document (Appendix 1), will provide students with a depth of knowledge that allows diabetes educators to assume total case responsibility in preference to the task allocation of patient care generally adopted by Diabetes Education Centres. As a result a diabetes educator, irrespective of service background, will have sufficient skills to meet the needs of the majority of diabetic patients. Skills and knowledge sufficient for total patient care are particularly important for those diabetes educators working in situations which lack the diverse resources available at major centres.

The concept of case allocation rather than task allocation is an important development in diabetes education which will encourage diabetes educators to provide continuity of care for their patients and strengthen the patient/educator relationship; an holistic approach to diabetes education. Case assignment also simplifies evaluation of patient outcomes and professional accountability.

Not all diabetes education takes place in large, well equipped Diabetes Education Centres; there are diabetes educators who rely almost exclusively upon their own knowledge base as their major resource. To meet the needs of all diabetes educators, course content needs to take account of the minimal level of facilities and provide a working knowledge of all aspects of diabetes care and education.

CONCLUSION

Although diabetes educators have achieved significant progress, it is imperative that further progress includes policies exhibiting an expectation of increased educational opportunity and standards, building to realistic expectations of professional recognition. To establish an effective measure of professionalism diabetes educators need to formulate standards which can be translated into operational definitions of high quality, to develop
mechanisms for evaluating services provided, and to take consequent action to maintain established standards and provide the highest level of service. In order to do this, diabetes educators will need to make decisions about:

1) what types of special learning experiences are required to qualify a health professional to assume the role of diabetes educator;

2) what level of recognition do diabetes educators hope to achieve. This will be one factor that will help determine the most appropriate design and location for programmes of professional preparation;

3) who should be responsible for establishing minimum standards for the accreditation of diabetes educators;

4) what agency is sufficiently qualified to rule on the accreditation of professional programmes for diabetes educators;

5) what should be the emphasis of programmes;

6) how can educational processes be altered to apply to the setting and the consumer;

7) what principles of education can be adapted from other disciplines such as psychology and sociology to assist diabetes educators to optimise their endeavours with their patients.

These decisions must be supported by consideration of the theoretical foundations of education for patient care.
CHAPTER 9

THEORETICAL FOUNDATIONS OF DIABETES EDUCATION

INTRODUCTION

LEARNING AND BEHAVIOUR CHANGE THEORIES
- Cognitive Learning Theories
- Motivation
- Behavioural Learning Theory
- Behaviour Modification
- Social Learning Theory
- The Health Belief Model

MANAGEMENT THEORY
- Negotiation

COMMUNICATION THEORY
- Therapeutic Communication
- Communication within Organisations
- Conflict Resolution
- Public Communication

PROBLEM SOLVING

EVALUATION

RESEARCH

SUMMARY
INTRODUCTION

There is consensus about the skills and knowledge which are required for successful diabetes patient education (e.g. see Australian Diabetes Foundation, 1987; Bajaj and Madan, 1982; Cook and Cohen, 1986; Dudley, 1980; Lane and Evans, 1979; Lorenz, 1986, 1987, 1989; Paduano et al. 1988; Sholz, 1984; Slaytor, 1987; Warren-Boulton, Auslander & Gettinger, 1982; & World Health Organisation, 1980 & 1985).

These authors indicate that in addition to knowledge from the biomedical sciences diabetes educators also need to be competent teachers, communicators and managers who, functioning as members of the diabetes team, undertake a role in negotiations, programme planning and evaluation. The clinical practice of diabetes educators is based upon identified competencies developed from knowledge and skills drawn from a variety of disciplines. The following review is intended to illustrate the theoretical underpinnings which define the content and processes of a curriculum for diabetes educators.

Unlike those education processes concerned with maturation, patient education is centred around changing peoples behaviour. To achieve this difficult task, diabetes educators are required to be able to adapt behavior change theory to the practice setting.

LEARNING AND BEHAVIOUR CHANGE THEORIES

People learn by two processes; through exposure to information and through their actions.
Cognitive Learning Theories

Cognitive learning theories depict learners as active processors of information. Piaget and Bruner laid the foundation for these approaches in addressing patterns of development (Craig, 1980; Santrock & Bartlett, 1986). Perceiving, remembering, thinking and forgetting are all cognitive processes, and are mental events of which we are aware (Redman, 1988).

These theories, which help educators understand the importance of sequence and previous learning experiences, are considerations during programme design.

Motivation

Motivation is the internal force that compels an individual to behave in a certain way (Bedworth & Bedworth, 1978). In the teaching situation, motivation addresses the willingness of the learner to put effort into learning and is arguably one of the most effective teaching strategies available to patient educators.

Principles of motivation.

1) Motives may be conscious or unconscious, innate or learned,
2) Individuals manifesting the same behaviour may or may not have similar reasons (motives).

Factors that motivate include:

* intention to learn,
* rewards and punishments,
* incentives.
Motivation can originate from within the individual (intrinsic) or from external or environmental sources (extrinsic). Many factors can get in the way of effective patient education. Factors that may influence the degree of motivation include:

* locus of control,
* learned helplessness,
* the sick role perspective,
* the patient/caregiver relationship.

The chief motivators essential for effective patient education are:

* perception,
* interest,
* significance,
* application.

Patient education in the main involves the patient making choices and changing behaviours. A patient motivated to change has the energy to exhibit and maintain the necessary changes to achieve his maximum health potential. Readiness to learn is the term used to describe the evidence of motivation at a particular time (Ross & Mico, 1980).

**Behavioural Learning Theory**

These theories focus on changes in overt behaviour as a result of learning. The learning process can be defined and described, and it occurs automatically. Skinner and Pavlov have demonstrated that behaviours can be shaped through the use of stimuli, response and reinforcement (Craig, 1980).

Creating conditions that are associated with the effective use of these tools are fundamental skills for educators.
Behaviour Modification

Behaviour modification, the basis of diabetes education, uses operant conditioning principles to shape human behaviour for therapeutic goals (Craig, 1980).

Behaviour change strategies are most effective when the emphasis of patient education is directed toward the integration of new demands into daily routines rather than to information about the pathophysiology of their disease. In the opinion of some patient educators, it is more important for a patient to understand how he should change his behaviour to achieve maximum control than to have an indepth knowledge of the pathophysiology of this disease (Mazzuca, 1982).

Social Learning Theory

Social learning theory attempts to bridge behaviour and cognitive theories. According to social learning, one major way people acquire information, values and attitudes, moral judgements, standards of behaviour, and new behaviours is through observing others (modeling). Bandura (1977) has explored the use of modeling as a method of behaviour change.

Contracting, self-monitoring, and skill training can be applied extensively to diabetes education.

The Health Belief Model

The Health Belief Model, developed in the 1950's, is an attempt to explain health behaviours (Greene & Simons-Morton, 1984; Pender, 1982). Application of this model helps diabetes educators explain origins of behaviour and provides a framework for planning intervention strategies. As the name suggests, the model stresses beliefs about;
1) what the results of particular actions may be, and, 2) how deeply one cares about the consequences and benefits.

The basic model has three components:

1) health motivation;
2) value of illness-threat reduction;
3) probability that compliant behaviour will reduce the threat.

Health decisions are influenced by cues that bring relevant beliefs into consciousness.

This model may be useful to educators attempting to identify priorities for education and/or to overcome problems with non-compliance. Application of this model to patient education will require educators to utilize principles of motivation, behaviour change, values clarification and problem solving.

In addition to assuming a facilitative role in patient management, diabetes educators must also be familiar with practices of organisational management if they are to operate effectively within a bureaucracy.

MANAGEMENT THEORY

Diabetes educators, being clinical nurse specialists, function as clinical supervisors, nurse unit managers, as well as primary care nurses. However, post graduate nursing curricula designed to prepare these health professionals pay inadequate attention to: 1) leadership and management; 2) organisational theory and practice; and, 3) personal development and enhancement of interpersonal skills (Edlund and Hodges, 1983). Both economic pressures and the needs of the market place indicate that attention to these deficits is necessary to avoid the ineffective use of clinical nurse specialists according to these authors.
The importance of managerial skills for diabetes educators has been recognised in The Standards of Practice circulated by A.D.E.A (1989).

Max Webers' theory of bureaucracy and McGregors' theory of personal motivation have particular application to diabetes educators (Robbins, 1980). Egan's (1985) application of systems theory to 'human-service workers' is also relevant to health professionals.

Negotiation

Negotiation, identified as fundamental to all social interactions, is an indispensable tool to diabetes educators, providing a management strategy and a patient care model.

As an organisational management tool negotiation serves as a method of behaviour change, a mechanism for reaching mutually agreed conclusions, and a bargaining process with power as the central concept (Robbins, 1980).

As a model of patient care, negotiation is treated as a contracting process in interactons between nurse and patient centering on adherence to the contract or the outcome of the negotiations (Kelley, 1983).

Negotiations involve assessment, goal setting, fact finding, identification of problems, issues and trends, position setting, strategy selection, tactic implementation, choice of evaluation system, and conclude with issue resolution (Kelley, 1983); a process not too far removed from the Nursing Process, a familiar strategy for patient care (La Monica, 1979; Marriner, 1982).
Negotiation skills have multidimensional application within diabetes education. Patient compliance, contingency planning, contracting, job counselling, stress management, and staff conflict are situations requiring effective negotiation.

Management by Objectives (MBO) also utilizes negotiation in a concept familiar to most nurses through the nursing process (Pollock, 1983). MBO has four essential elements: specific, measurable, long term and short term goals; joint goal setting; action planning; and review and evaluation. The process has application from the overall goals of the organisation down to the level of the individual.

The success of diabetes education programmes may depend upon educators who demonstrate organisation and managerial skills that facilitate both the planning of patient education programmes and the organisation of Diabetes Education Centres.

Equally important within the organisational and clinical contexts are communication skills. Leadership, the outcomes of change, and the often associated conflict resolution, goal setting and problem solving are determined by communication skills (Stevens, 1980).

**COMMUNICATION THEORY**

Effective communication on all levels, intended and unintended, contributes significantly to the success of strategies designed to change peoples' behaviour. In fact, the effectiveness of interactions between clinician and patient is one of the most critical factors in effective management of diabetes (Rost, 1989). For educators intent on providing a comprehensive service to patients, the significance of communication and counselling skills in diabetes education cannot be overlooked. Unfortunately, health professionals rarely have opportunities to study these skills during their basic professional preparation (Lorenz, 1986).
Distortion can arise at the source of the message, during transmission or during interpretation, and a major problem in diabetes care according to Gershenfeld (1988), is an unconscious collaboration between patient and care giver to avoid the issue. Described as game playing, avoiding real problems and predictable responses has payoffs for all players and provides temporary feelings of comfort. The caregivers 'payoff' is a health professional who appears to be in control. The patient's payoff is 'pleasing' the caregiver. The consequences of these games, if permitted to continue by poor communication skills, can be serious.

Communication skills are learned, and while some individuals are more successful than others, all individuals have the ability to develop social competence and effective communication. Knowledge, experiences, motivation and attitudes influence the outcomes of our communication (Campbell, 1988).

**Therapeutic Communication**

Paramount to communication is **listening**. Listening has also been pinpointed as the crucial helping skill (Pietrofesa, Hoffman & Splete, 1984) and a counselling and a teaching skill (Rogers 1983).

Silence, passive listening and reflective listening, or active listening, paraphrasing, clarification and summarization have been described as foundation teaching and counselling skills necessary for therapeutic listening (Pietrofesa, et al. 1984; Porritt, 1984).

To function effectively as a professional, diabetes educators need to be comfortable about confronting other people. **Assertiveness** refers to communication skills that allow one to:
... attend to and informs others of one's own needs and feelings and sends the message to the other in such a way that neither person is belittled, put-down or blamed (Porritt, 1984, p97).

As a result of the patient role and the hospital culture, diabetes educators, with their emphasis on patient centred care, may need to adopt a role as patient advocate. This role demands well developed communication skills, particularly assertive behaviours, to be successfully applied. The traditional subordinate position of nurses within the health care system and the passive role of the patient make this role difficult at best. Feelings of helplessness and powerlessness, resulting from an inability to utilize assertive behaviours, have been identified as a source of job dissatisfaction amongst nurses and a cause of high job turnover (Pinkelton, 1982).

An assertiveness workshop for nurses has been developed by Kay Ball, herself a registered nurse. The workshop exposes participants to information giving and practice sessions that will develop assertive behaviours (Ball 1984, 1985).

**Communication within Organisations**

Diabetes educators do not only communicate for therapeutic purposes. Within the organisational environment, diabetes educators are also administrators. Communication is important for effective administration.

Communication breathes life into relationships in organisations, institutions and communities. The exchange of messages between individuals and units creates common understandings (Egan, 1985, p175)

Within an organisation, communication involves; 1) sharing goal-related information, and, 2) providing feedback (Robbins, 1980). Without information, goals cannot be pursued, while confirmatory and corrective feedback provides motivation (Egan, 1985).
Conflict Resolution

The pursuit of organisational, and personal goals can lead to conflict. The relationship of leadership, power and authority to motivation can have significant influence upon individual and group behaviour (Robbins, 1980). Wylie-Rosett & Villeneuve (1989) describe conflict resolution as a management strategy. A team approach and a consensus development process was used to resolve problems encountered by a diabetes team in the development of Quality Assurance Plans.

Public Communication

Diabetes educators require advanced communication skills to fulfil another of their functions, which is to raise community awareness about diabetes, and develop resources. These strategies will allow patients with diabetes to function in their social environment as autonomously and anonymously as possible, within the restrictions imposed by their disease. These functions will be fulfilled most effectively by diabetes educators who have had opportunities to practice and develop skills in organising meetings and media liaison, are able to contribute to policy decisions, and demonstrate leadership skills (Australian Diabetes Society, 1988).

PROBLEM SOLVING

Helping patients solve their problems is an obvious function of diabetes educators. Problems can be described as anything that prevents a need being met. Problem solving is a decision about appropriate action. Diabetes educators need to implement appropriate problem solving strategies during patient care and to meet organisational demands.
Recognising a problem requires four basic steps; 1) motivation to meet a need, 2) recognition of potential blocks, 3) defining the problem and developing an hypothesis for a solution, and, 4) effective solution, the goal of problem solving (Porritt, 1984).

Pietrofesa et al. (1984) identify three major requirements for skillful decision making; 1) examination and recognition of personal values; 2) knowledge and use of adequate, relevant information, and, 3) knowledge and use of an effective strategy for converting this information into action.

Here again, the nursing process has applications for problem solving. The assessment, planning, implementation and evaluation phases represent a problem solving approach to patient care (Stevens, 1980).

EVALUATION

Evaluation of diabetes treatment and education programmes should be central to all educational endeavours, having been identified as a key issue in efforts to improve the health of diabetics (Assal & Conti, 1988). Evaluation is crucial at all stages of health education. All stages of the education process, from identifying an existing need to measuring results, require evaluation and documentation. Quality assurance, quality assessment and evaluation are terms used in the literature to describe efforts to ensure quality health care.

Quality assurance is becoming an important issue in all areas of health care and diabetes educators are likely to be involved in quality assurance programmes designed to monitor policy, processes and outcomes on both an organisational and unit based level. To enable diabetes educators to assume an active role in monitoring performance, evaluation skills, a vital resource for all educators, are important components in programmes for all health professionals (Assal & Conti, 1988).
Evaluating the impact of patient education is complex, and poses a number of methodological and technical problems which may explain, in part, why evaluation is a generally neglected task amongst health professionals (French, Wittman & Gallagher. 1989).

The outcomes of diabetes education can be evaluated in many ways, including questionnaire scores to measure changes in knowledge, indices of metabolic control, frequency of hospitalisations, community awareness, and costs of health care.

**RESEARCH**

The major goal of research in diabetes education is to improve practice, however to date research and theory have made little impact upon practice and education (Swanson & Chenitz, 1982). While the legal obligation is not to harm the patient, there is also an ethical obligation to ensure that management does in fact have positive results for patients. The knowledge base associated with professional practice develops from management strategies with demonstrated effectiveness; theory embedded in practice. The reluctance by diabetes educators to evaluate the care they give indicates a reluctance to engage in research (Brink & Wood, 1983).

Perhaps this is a reflection of misunderstandings about the nature of research and its requirements. Research is, in the minds of many health professionals, imbued with mystical qualities emanating from inadequate basic training. That research covers a broad range of activities and does not necessarily imply experimentation is a concept which many health professionals need to learn.

There is no doubt about the need for research in diabetes education. Research skills are important for professional practice and to monitor patient outcomes.
SUMMARY

Diabetes education utilizes skills and knowledge from a number of disciplines, some of which have not been addressed in pre-service programmes for health care professionals. Aspects of theories with their origins in management, communication, teaching and learning, psychology and sociology, and research methods, are all utilized to some extent in diabetes education. The application of these theoretical underpinnings to a curriculum for diabetes educators is illustrated in the following chapter.
CHAPTER 10

CONTENT SEQUENCING AND PROCESS

INTRODUCTION
CURRICULUM MODEL
CONTEXT OF THE CURRICULUM
CONTENT, SCOPE AND SEQUENCING
CONCLUSION
INTRODUCTION

The impetus for this curriculum was that:

1) individuals with diabetes often fail to achieve their optimal health potential;
2) health professionals who function as diabetes educators often do so without any specific training in diabetes or principles of education;
3) diabetes educators recognise these problems and want to remedy the situation.

How can these problems be overcome?

In this chapter, the curriculum model is discussed, the influence of context upon this curriculum demonstrated and the content, sequencing and process explained.

CURRICULUM MODEL

This curriculum is based upon an eclectic model developed by the researcher (Figure 4). A model illustrating an exit point was considered inappropriate as a professional development model for health practitioners who, for the duration of their professional lives, must continually update knowledge and practice. The model demonstrates a two way exchange of knowledge and skills. Students will take the information they require to demonstrate competence and add, from their service specialty, to the developing body of knowledge unique to diabetes education. The model also demonstrates the variety of resources and learning opportunities students will be encouraged to pursue.
Figure 4
A Model Reflecting the Curriculum Building Process for a Programme for Professional Diabetes Educators.
The influence of context upon the learning experience cannot be overlooked (Gale et al., 1981). Expectations of diabetes educators and other health professionals as well as health economics and health policy have been considered and accounted for in the curriculum. Further, medical technology is changing at such a rate that skills may become obsolete in a short time. To enable health professionals to keep abreast of new developments the design and content of professional programmes must encourage learners to interpret, assess and redefine what they are taught.

This curriculum aims to prepare generalist diabetes educators (Diabetes Care Personnel) who are competent, independent learners with the attitudes and skills necessary to question current procedures and practices and seek answers to future problems. Not all diabetes educators will have access to the same facilities. This study has shown quite obviously that availability of resources varies considerably. The course content is geared to take into account the minimal level of facilities and teach towards that.

Diabetes educators work in an environment requiring theoretical thinking, research and creative practice. For improvements in clinical practice to be achieved, programmes to prepare diabetes educators require more than extending the time span of current courses. This curriculum differs from present programmes for diabetes educators in several ways. An increased depth and breadth of content is designed to be undertaken by external studies, and outcomes are assessed against identified competencies which emphasise the importance of process learning.

This curriculum encourages diabetes educators to integrate theory and practice. Apart from compulsory attendance on campus for residential schools, the theoretical component can be completed within the context of clinical commitments. Theory and practice are seen from the beginning to be mutually complementary, undertaken when
possible within the same physical environment. The integration of theory and practice is encouraged by processes such as keeping journals and diaries, submissions of audio and video tapes, analysis, and collegial exchanges; activities designed to facilitate translation of theory into constructive clinical practice.

An important consideration in planning a curriculum to provide the basis for professional education is the need to continue learning after a formal course of study. Diabetes educators are not beginning professionals dependent upon acquiring a large body of necessary knowledge or socialisation. They are health professionals with some experience. Curricula designed for practising health professionals offer an opportunity to move away from learning governed by objectives toward educational experiences that are intrinsic to the experiences and understanding of participants. Education experiences should be based upon competencies which are identified and valued by learners.

CONTENT, SCOPE AND SEQUENCING

Apart from being tertiary based and offered by external studies, the content of this programme differs from existing A.D.E.A. accredited programmes in several other ways by encouraging: a) holistic diabetes care, b) development of a body of knowledge by diabetes educators, and c) a systematic approach to, and documentation of, patient education.

A) Holistic Diabetes Care

The depth and breadth of content will enable diabetes educators who successfully complete course requirements, to function as generalist diabetes educators meeting all the needs of the majority of patients with diabetes.
Study of biological and behavioural sciences will provide students with a depth of knowledge allowing nurses to increase their dietary skills and, without assuming the expert role, assume total case responsibility, and act more effectively in isolation. Dietitians will also be able to develop skills traditionally associated with diabetes nurse educators (for example see Appendix 1 pp16-24). As a result a diabetes educator, irrespective of background, will have sufficient skills to meet the needs of the majority of diabetic patients. Not all diabetes education takes place in large, well equipped Diabetes Education Centres. For some diabetes educators their own knowledge base is their main resource. Therefore, it is important for all diabetes educators, nurses or dietitians, to have a working knowledge in both disciplines.

This is not to suggest that specialist service skills will no longer be valued. Educators with specialised skills, knowledge and experiences developed during their practice would be utilized as a team resource and to provide ongoing education for team members. To enable diabetes educators to discharge their responsibilities as a team resource, the theoretical component will be structured to encourage participants to undertake individual projects designed to further develop their skills and knowledge in their speciality area.

Holistic patient care implies more than consultation with the same educator. Holism also implies attending a broad range of the patients' physical and psychological needs. Counselling and communication techniques are fundamental skills for diabetes educators and, in tandem with the social and psychological implications of diabetes, direct the emphasis of this curriculum.

The pathophysiology and management of diabetes is not neglected. Students will be assisted to obtain the skills necessary to integrate medical aspects of diabetes with communication and problem solving skills to identify patient deficits, be sensitive to
changes, correctly interpret, or at least identify cues and inferences from patients and/or their families, and translate this information into the most appropriate management plan for each patient.

B) Development of a body of knowledge by diabetes educators

Diabetes educators work in an environment requiring integration of theoretical thinking, research and creative practice. Students will be expected to be active participants in this course. In addition to developing skills and knowledge, they will be expected to contribute from their service specialty to a developing body of knowledge relating to diabetes education. This knowledge is dynamic and continually changing as diabetes education is developed and refined. Participants will also complete periods on campus organised into lectures, tutorials, and science practicals.

C) A systematic approach to, and documentation of, patient education

The nursing process, a mechanism to organise patient care and education into an orderly and systematic format of goal setting, planning, implementing and evaluating care, is also included in this course. Integration of this process into daily practice will be encouraged by the requirement of written assignments to demonstrate application of this process to patient care particularly goal setting and evaluation, identified as important, yet often overlooked, aspects of patient education.

The specified period of 'Supervised Clinical Experience' (pp 41-57 of Appendix 1) and submissions for the theoretical component will be designed to be a reflection of, and completed within, the clinical milieu. In this way the application of knowledge gained from the course to the clinical setting and the importance of documenting care is evident to students from the outset.
Course assessment would be based upon the ability of the diabetes educator to identify communication barriers, inappropriate teaching techniques, environmental factors or other variables influencing the outcome and the suitability of strategies to overcome difficulties in these areas. To successfully complete this course, participants would demonstrate not only understanding of the management of diabetes, but also provide evidence that they successfully apply factors that facilitate learning to their clinical practice. How to teach is now considered to share at least equal importance with what to teach (Lorenz, 1987).

The sequencing of the course (outlined on page 13 of Appendix 1) is organised to provide instruction in the fundamental areas of diabetes management and education in Session 1, namely, biological science, pathophysiology, behavioural science and foundations of teaching and learning. This information is expanded in Session 2 to include additional knowledge that will add significance and depth to study undertaken earlier in the course. Content areas include further study in programme planning and teaching techniques, communication studies, management techniques and health education and research. The Supervised Clinical Practice can be undertaken throughout the programme at times nominated by students.

CONCLUSION

The educational environment is dynamic, continually in a state of surge, changing in time with social needs and expectations. Every effort must be made during a curriculum development exercise not to produce a piece of work that largely replicates what has gone on before. A new curriculum must consider and address the issues that were identified as inappropriate aspects of current practice. Failure to consider the changing needs of learners and their prospective market will produce a curriculum that stifles both teachers and learners.
The professional education experiences for diabetes educators must be associated with the achievement of predetermined competencies. Such competencies should be achievable through a variety of accredited programmes including post-graduate study at a recognised educational facility. This curriculum development project has taken account of the desire of diabetes educators and the requirements of professional bodies to present a programme, significantly different from those described in Chapter 3 in depth of content, presentation and most importantly, the philosophical approach to diabetes education. The concept of a generalist diabetes educator could be a mechanism to encourage accountability amongst professionals, evaluation of patient progress and the motivation that comes from autonomous and professional practice.
SECTION E

CURRICULUM EVALUATION
CHAPTER 11

CURRICULUM EVALUATION

INTRODUCTION
WHY EVALUATE?
EVALUATION PROCESS
EVALUATION MODELS
INTRODUCTION

This chapter will examine the nature and functions of curriculum evaluation; the purpose of evaluation will be explained, and the evaluation process described. Methods of data collection will be identified and evaluation models described. A rationale for the model chosen to evaluate the draft curriculum is also provided.

WHY EVALUATE?

The purpose of an curriculum is to organise learning experiences in a manner that will facilitate students' learning. Therefore, one task of a curriculum evaluator is to assess if this is the case. Can it be said, with a reasonable degree of certainty, that a particular curriculum element actually brought about the desired behaviour change? A curriculum is said to have internal validity if this is the case and a cause and effect relationship can be demonstrated between the content and behaviour change in learners (Print, 1987).

Evaluation does not necessarily imply the entire curriculum is under review. Any aspect of a curriculum can be evaluated, either as a requirement of the course and or to obtain information about the programme (Hunkins, 1980). Information is needed as a foundation for programme decisions and to provide feedback to those involved. Whether a programme is to continue, be redesigned or discontinued, will be determined from this information.

These decisions in turn influence the need for, and effectiveness of, staffing, materials and processes. The effectiveness of a programme in terms of costs, student impact, adoption, goals and objectives also warrants evaluation (Hunkins, 1980).
EVALUATION PROCESS

Evaluation is primarily concerned with assessing experiences and learning activities (processes), provided within the curriculum and the resulting student performance (product) (Print, 1987). Curriculum evaluation is a form of quality assurance that provides a basis for decision making about students and learning.

The evaluation process involves taking measurements, performing an assessment, and based upon this information, making judgements about the curriculum, processes, teachers and learners. Measurement is concerned with collecting data; usually statements of performance expressed quantitatively. Data is obtained from a variety of relevant sources, for example, standardised tests, interviews, questionnaires, anecdotal records, and teacher-made tests. These instruments collect information about student attitudes, performance or behaviour (Print, 1987).

Assessment involves interpretation of the data to determine levels of achievement (Print, 1987). During the assessment phase this data is translated into meaningful information. Norm-referenced assessment compares the performance of an individual with that of other learners, for example, position within the group. Criterion-referenced assessment compares an individual's performance against predetermined criteria, for example, educational goals.

Evaluation, the final stage in the curriculum evaluation process, generates information from the data about the success of learning endeavours. Evaluation also involves value judgements about the learning experiences. Formative evaluation takes place throughout the programme and assesses how well learning is progressing under the guidance of the teacher. Summative evaluation is applied at the end of a learning programme. Diagnostic evaluation has two functions, either to discover underlying causes of deficiencies or to group learners appropriately at the beginning of instruction.
EVALUATION MODELS

A variety of models have been developed to guide curriculum evaluation. The aim of Tyler's objective model of curriculum evaluation is to determine the proximity of pre-stated learning objectives to the terminal behaviours of learners (Marsh & Stafford, 1984).

Robert Stake believed evaluation should focus upon the dynamics of teaching rather than upon outcomes. The purpose of the dynamic model is to provide a subjective analysis of the curriculum by determining what information is sought by learners and what is judged to be of value in the programme (Stenhouse, 1986).

McDonald adopted an holistic approach to curriculum evaluation to evaluate a Humanities Project, a curriculum without pre-stated objectives (Print 1987). The holistic model of curriculum evaluation resembles the model developed by Parlett and Hamilton (1976) which was developed to illuminate the audience about a programme. The process of illuminative evaluation, adapted from the anthropological research paradigm, is to "observe, inquire further, and then seek an explanation" (Parlett & Hamilton, 1976, p92).

The draft curriculum developed in conjunction with this thesis outlined a post graduate level programme. As is usual for programmes at this level, the course was to be run over four academic semesters of study. The length of the programme and the logistic impossibility of offering the curriculum as a programme of study at this stage precluded the traditional method of curriculum evaluation by student outcomes. Nevertheless, some measure of the success of this curriculum against the stated aims of the project was necessary. For these reasons, the illuminative evaluation paradigm described by Parlett and Hamilton (1976) was chosen. Illuminative evaluation aims to determine how effectively the educational experiences described bring about the desired changes to behaviour within a given learning context. The emphasis is upon examining the
innovations as an integral part of the learning milieu.

The evaluator attempts to give an account of a curriculum initiative rather than to measure the outcomes. Evaluation generally begins from a broad perspectives data base and progressively clarifies and re-defines concepts concentrating attention on the emerging issues.

Two concepts are central to illuminative evaluation: the 'instructional system' and the 'learning milieu'. The instructional system makes statements about aims, and describes the content, organisation and sequencing of learning experiences. The learning milieu describes the context of the curriculum; the social, cultural, institutional and psychological influences impinging upon learning. Parlett and Hamilton describe the learning milieu as "the social-psychological and material environment in which students and teachers work together" (1976, p90).

The context of this curriculum development project is influenced by service needs of the health care system, maturation and development priorities of the education system, accreditation requirements of professional bodies and expressed needs of health professionals. The evaluation aimed to assess the impact of the curriculum upon these factors.

Illuminative evaluation is not a standard methodological package. The most appropriate methods depend upon the available techniques; "the problem defines the methods" (Parlett & Hamilton, 1976, p92). Within the context of the curriculum evaluators observe, inquire and seek to explain. Objective and subjective information is collected by interviews and questionnaires.
Like all other evaluation models, there are inherent disadvantages in this model.

a) The subjective nature of the data means that attention must be paid to the professional standards and behaviour of participants whose co-operation must be obtained.

b) The scope of the investigation and the reliability of generalisations from the situation studied is limited.

This curriculum is designed to work towards an effective theory of teaching and learning for diabetes educators. At this point of theory development, valued information is information that helps with curriculum development decisions, in contrast to how well the document works.

The draft curriculum was an attempt to determine:

1) what types of educational experiences diabetes educators value?
2) is the project feasible (can it be used?)
3) does the draft curriculum give adequate weight to all knowledge diabetes educators require?
4) is the content of relevant depth and breadth to provide learning opportunities that will meet the present needs of a professional group.

The curriculum development began with exploratory research to establish the future learning needs of diabetes educators. Evaluation of the draft curriculum was also exploratory research to determine the degree of satisfaction expressed by diabetes educators toward the draft curriculum and its perceived merits for fulfilling its objectives.

The evaluation is primarily designed to discover what is wanted/needed in the context of professional development programmes for diabetes educators. It is also intended to determine what parts of the draft curriculum require change and how these changes can be designed to make the programme more effective. The evaluation is based
upon subjective interpretation of curriculum content rather than objective assessment of outcomes. The final curriculum developed and implemented from this data will stand outcome evaluation.
CHAPTER 12

EVALUATION STUDY

METHOD OF EVALUATION

RESULTS AND DISCUSSION
- Curriculum Design and Process
- Supervised Clinical Experience
- Content

SUMMARY

CURRICULUM REVISION
In this chapter the methods of data collection for the curriculum evaluation survey are outlined and results of the curriculum evaluation survey presented and discussed. These results relate to a draft curriculum document which was subsequently revised and is presented in Appendix 1.

METHOD OF EVALUATION

A draft curriculum was prepared based on theories discussed in Chapter 9, needs identified by educators, skills and knowledge identified in professional literature, deficits identified by patients, the 'ideal' diabetes educator identified by physicians, content of curricula for undergraduate nurses, diabetes educators and bachelor of education programmes. The Role Description of Diabetes Educators, (A.D.E.A, 1988) was also considered.

The design, content and process of the draft curriculum was evaluated using questionnaires consisting of Likert Scales and open-ended questions designed by the researcher (Appendix 5). Following evaluation of the draft curriculum, a workshop was to be held.

Evaluation forms and workshop registration forms, attached to copies of the draft curriculum, were sent to 58 health professionals involved in diabetes education, 43 of whom had participated in either the pilot or main surveys and 15 who had not but who had expressed an interest in the curriculum. Four weeks later a follow-up letter was sent. Three weeks before the workshop date, only three educators had indicated an intention to attend. Telephone contact was made with the remainder and only 2 indicated their intention to attend. Due to this general lack of response, the workshop was cancelled and further letters sent to educators notifying them of the cancellation and requesting evaluation forms be returned, even if only partly completed. Seventeen evaluation forms were returned, a very disappointing response rate of 29%.
RESULTS AND DISCUSSION

Curriculum Design and Process

a) *Name of the course and qualification received*

A broadly based qualification offering an elective in Diabetes Education was favoured by the majority (13) of the 17 respondents, only 4 preferred a qualification that is diabetes specific. Fifteen believed a course to prepare diabetes educators should be at postgraduate level, one respondent believed a short course with no academic recognition to be appropriate, and one would agree with a short course provided it was combined with a post graduate level education programme.

When asked an appropriate time span for a short course, 2 suggested one month and 1 suggested a total of 6 weeks run concurrently with a postgraduate programme in education.

Respondents were also asked if they believed subjects should/could be rearranged to better meet the needs of diabetes educators. Comments were submitted by six respondents of whom four commented on the supervised clinical experience. Altering the sequence to allow the inpatient experience to be completed before outpatient experience was suggested by three respondents. One respondent indicated dissatisfaction with the concept of supervised clinical experience. This respondent does not believe that a correspondence course combined with supervised clinical experience is adequate preparation for diabetes educators suggesting instead that more meaningful clinical experiences could be achieved by integrating practical experience into the course content. The meaning of this suggestion was not clearly stated, however, this could be a reference to present practices. Currently, clinical experiences are provided within the framework of the 7 week courses being offered. This means in effect that 3 weeks are spent studying
theory, 3 weeks obtaining clinical experiences and 1 week completing assessments. From the explanation of the model offered in Chapter 10, it can be seen that theory and practice take place within the same setting over an extended period of time. In this way, theory and practice merge in a way that could be expected to be more effective than a contrived clinical experience during a 7 week course.

Other suggestions included a greater emphasis on community awareness and education programmes. The importance of professional awareness of all aspects of non-insulin dependent diabetes mellitus was also highlighted by several respondents. The need for content designed to take account of the increasing tendency for diabetes educators to prescribe and change treatments was also highlighted.

The correspondence mode of study had some appeal to five respondents while 6 believed the concept had merit and 5 believed it to be highly appealing if the student is employed as a diabetes educator.

The remainder of the questionnaire comprised responses on a four point scale, ranging from not at all to extremely relevant in addition to open ended questions.

b) Aims and objectives

All respondents believed the aims were extremely relevant to diabetes educators, and that most of the objectives could be achieved after completion of the course content. Ten respondents believed following completion of the course diabetes educators would be extremely well prepared, while 7 believed the course to be satisfactory preparation. Many respondents pointed to the need for increased emphasis on home stabilization and community maintenance.
When asked how well diabetes educators thought the course would prepare them for their role, eight respondents indicated well prepared, 5 believed they would have satisfactory preparation, 1 believed to some extent and 1 did not believe there was any real difference between this course and the seven-week courses currently available.

Two respondents believed achievement of objectives would depend upon individual abilities, while one believed the dietary component to be too complex and the clinical experience to be unrealistic.

Employment as a diabetes educator is not a prerequisite to beginning this course. Without prior employment as a diabetes educator, several respondents believed graduates could not reasonably be expected to achieve the following objectives:

1.2 Exercise sound clinical judgement to provide competent diabetes care in a variety of community and institutional settings.

1.3 Recognise the individual needs of diabetic patients and their families.

1.4 Demonstrate a problem solving approach to planning individual diabetes care and education utilizing principles of biological, behavioural and health sciences.

1.6 Exercise critical and discriminative thinking in evaluating the need, process and outcome of diabetes care and education.

The absence of objectives specifically related to home stabilization was highlighted by one respondent.

**Supervised Clinical Experience**

Four respondents believed the supervised clinical experience would provide excellent experience, nine respondents believed the experiences were satisfactory while 4 believed the experiences would benefit students to some extent. It was suggested by 4
respondents that the clinical experience could be improved by increasing the time allocation and one respondent observed that the adequacy of the clinical experience would depend upon the students' current employment position and previous experience.

The methods of evaluating clinical practice were thought to be relevant. One respondent believed that performance on supervised clinical experience, whether good or bad, is not an absolute indication of future service. Only 2 respondents believed they would not be able to nominate a suitable supervisor for their clinical experience and only one would have difficulty nominating a facility offering the specified clinical experience.

Content

The content section of the evaluation form is lengthy, therefore it is not surprising that only 8 respondents answered all questions. Three respondents failed to answer any of these questions.

a) Pathophysiology and Management of Diabetes Mellitus

The content was described as extremely adequate by 3 respondents, 9 believed it was adequate, and 2 that it was adequate in parts. Areas identified as warranting further expansion include home stabilization, and diets for special groups of diabetics, including patients with complications. Nominated special groups included patients with renal, cardiac and coeliac disease, obesity, gestational diabetes, shift workers and those having total parenteral nutrition.

The general feeling amongst respondents was that the outline presented was too extensive to be covered in one part time semester. One respondent also believed that a delineation of knowledge between nurses and dietitians would be appropriate as nurses do not have the background to make complex decisions concerning diet. However, not all nurses
work with the support of dietitians, and may in fact require this background to safely and confidently make patient care decisions. Further, a generalist diabetes educator with skills and knowledge to meet all the needs of the majority of patients with diabetes is a stated outcome of this programme. Additional dietary references were suggested by 2 respondents.

b) Biological Science

Four respondents believed the content covers all relevant areas extremely well, eight adequately, and 2 to some extent. One correspondent suggested that the factors controlling insulin secretion required special attention.

Poor response rates to questions relating to content other than pathophysiology and management of diabetes could be a reflection of the respondents' lack of knowledge in these areas.

c) Foundations of Teaching and Learning

Only 8 respondents completed this section. No specific comments were made about this component other than that the content was seen as adequate and the references satisfactory.

d) Behavioural Science

The content was thought to be adequate by the 8 respondents completing this section. Objectives relating to use of media and advertising and factors affecting health were seen to be more appropriate in the Health Education component. Tension and coping methods were also identified as important knowledge for diabetes educators.
e) **Curriculum Design, Lesson Planning and Teaching Techniques**

Although the content was perceived to be too extensive for one part-time semester, the content was thought to cover adequately all relevant components. However, once again, only 8 respondents replied to this section. Several other relevant reference books were also suggested.

f) **The Diabetes Educator as a Manager**

Skills in computing, writing submissions, keeping statistics, and time management were identified as worth including in this section.

g) **Communication Theory and Practice and Counselling Techniques**

One respondent believed the content had no relevance for diabetes educators, 8 indicated it was relevant and 4 extremely relevant. Two respondents do believe the content is beyond the requirements of diabetes educators.

Behaviour modification and group education skills were suggested for inclusion in the content. This content is included in the 'Behavioural Science' component of the Draft Curriculum.

h) **Health Education and Research Methodology**

Computer skills and submission writing were nominated for addition to the content. One respondent believed that diabetes educators require knowledge more basic than this component provides, and another believed they can call on others with these skills if necessary. Some topics (unspecified) were thought to be irrelevant for diabetes educators.
CONCLUSION

These responses (unavoidably) were from a small sample of diabetes educators and probably from those who valued further education.

The majority of respondents believed there is a long overdue need to move away from previously accepted low standards for professional preparation of diabetes educators to a tertiary award. A minority of those recognise that a course such as this may not be achievable for all those who aspire to be diabetes educators and for some of those already in the role.

CURRICULUM REVISION

After the curriculum was evaluated, it was modified so that it could be included as a 'major' within another programme, for example, Bachelor or Graduate Diploma or Masters in Nursing, Health Education, or Community Health. To allow for this the programme duration was reduced to one year of part time study as opposed to two years of part time study which is usual for post graduate diploma level awards. While this was the format preferred by a majority of respondents to the evaluation survey, a post graduate programme identifying diabetes education as a speciality may be appropriate depending upon the demand from diabetes educators and the format of post graduate courses at individual tertiary institutions.

The content areas remained unchanged. Modifications were effected by alterations to the sequencing and scope of the curriculum.

Sequencing of the supervised clinical experience was also revised to encourage students to undertake inpatient experience prior to outpatient experience. Having revised the programme to be completed within one year the sequencing of this experience
probably is not as relevant as was the case when the programme spanned two years.

Other minor changes to content and references were made in line with respondent recommendations where appropriate.

Detailed recommendations for professional development of diabetes educators will be addressed in Chapter 13.
CHAPTER 13

CONCLUSIONS AND RECOMMENDATIONS
The functions of a diabetes educator are complex, demanding and require a foundation of theory which cannot be obtained solely from on-the-job experience. However, both published reports and the research presented here suggest that workforce experience is the main type of preparation for many diabetes educators. This situation must, in part, be implicated as a cause of sub-optimal patient outcomes, a major concern for all professionals involved in diabetes education.

Diabetes educators are a heterogeneous group of health professionals with differing educational and training backgrounds, values and attitudes about patient care. As a result of this diversity, distinctions between the roles and responsibilities of the various professional groups within the diabetes education team have emerged. Whilst the functions of some team members, for example physicians, psychologists, and podiatrists require unique skills, the distinction is less obvious between the functions of nurses and dietitians. In fact, nurses, in particular those without adequate resource backup, often assume responsibility for dietary education and advice. However, few have adequate preparation for this aspect of diabetes care.

The concept of case allocation implicit in this thesis will provide students with a depth of knowledge that allows nurses to increase their dietary skills and, without assuming an expert role, assume total case responsibility, and act effectively in isolation. Dietitians will also be able to develop skills traditionally associated with diabetes nurse educators. As a result, a diabetes educator, irrespective of service background, will have sufficient skills to meet the needs of the majority of diabetic patients.

Case allocation, as opposed to the existing practise of task allocation, is an important development in diabetes education that will encourage diabetes educators to provide continuity of care for their patients and strengthen the patient/educator relationship; an holistic approach to diabetes education. Case assignment also simplifies evaluation of patient outcomes and professional accountability.
The concept of case allocation warrants further investigation, implementation in a number of settings, and evaluation to determine the merits of this approach to patient care, and the validity of the premise that 'ownership' amongst diabetes educators and their clients is a factor in improving patient care outcomes.

This thesis has shown that the problems for diabetes educators relate to:

- inadequate training programmes, at all levels of health care;
- insufficient recognition of diabetes education as a health care service speciality;
- the absence of compulsory role preparation which erodes the importance of training for this speciality;
- insufficient recognition of the theoretical underpinning of diabetes education.

This thesis suggests significant changes to the professional training and practice of diabetes educators in the belief that these changes will benefit patients with diabetes and diabetes educators.

Training Programmes.

A goal of A.D.E.A. is for a programme for health professionals recognising diabetes education as a service speciality to be offered by a tertiary institution, for example, a university. The programme described in Appendix 1 is most likely to be implemented as a 'major' within an existing programme, for example, some of the bachelor, postgraduate diploma or masters level programmes currently being offered to health professionals.
Recommendations.

That diabetes education is a subspeciality requiring specialised educational preparation.

That A.D.E.A. establish a programme of certification for diabetes educators.

That programmes in diabetes education be established at tertiary institutions, for example universities.

That prospective diabetes educators be encouraged to undertake a course in diabetes education at a tertiary institution.

That A.D.E.A. establish a mechanism for accreditation of appropriate tertiary courses in diabetes education.

That A.D.E.A. accredit only those courses demonstrating content of sufficient depth and breadth to allow graduates to assume the role of generalist diabetes educators meeting the totality of educational needs for the majority of patients with diabetes.

That diabetes educators be encouraged to take part in workshops focusing on specific aspects of diabetes care. Attendance at such workshops should accumulate credits towards certification.

That diabetes educators encourage other health workers involved in diabetes care to undertake training in education and diabetes.

That diabetes educators undertake evaluations of their practice and their programmes, and establish standards of practice.
REFERENCES
References


Australian Diabetes Educators' Association Resources Directory, 1988 [b].


Ball, K. *Training to Be Assertive - Part B*. The Lamp, Feb., 1985, pp.31-35.


Campbell, Y. *Therapeutic Listening*. Renal Educator, 8:1, 1988, pp.7-8


Corlette, J. *What is Education*. Diabetes Care, 11:2, 1988, p.216


Hayes, T.M., & Harries, J. *Randomised Controlled Trail of Routine Hospital Clinic Care Versus Routine General Practice Care for Type 11 Diabetics*. *British Medical Journal*, 289, 1984, pp.728-730


Knowles, M. *Andragogy: an Emerging Technology for Adult Learning*. In Tight, M., (ed.). *Educating for Adults*. *Adult Learning and Education*, 1, Croom Helm: Canberra, 1983, pp.53-70

Kamer, M. *Reality Shock: Why Nurses are Leaving Nursing*. C. V. Mosby: St. Louis, 1974


Lane, D.S., & Evans, D. *Measures and Methods in Evaluating Patient Education Programs for Chronic Disease*. *Medical Care*, 17:1, 1979, pp.30-42


Lorenz, R.A. *Training Health Professionals to Improve the Effectiveness of Patient Education Programs*. *Diabetes Educator*, 12, 1986, pp.204-209.

Lorenz, R.A. *Are Health-Care Providers Effective as Diabetes Educators?* *Clinical Diabetes*, Jan/Feb, 1987, pp.11-14


Pender, N. *Health Promotion in Nursing Practice*. Appleton-Century-Crofts: Connecticut. 1982


Pinkelton, N.H. *Commitment to Nursing & to Self*. *Nursing Management*, 13:2,
1982, pp.39-41


Rost, K. *The Influence of Patient Participation on Satisfaction and Compliance*. Diabetes Educator, 15:2, 1989, pp.139-143


Scholz, V. *Evaluation of a Postgraduate Course for Diabetes Educators*. Diabetes Educator, Special, 1984, pp.80-84


Simpson, I.H. *Patterns of Socialization into Professions: The case of Student Nurses*. Social Inquiry, 37, Winter, 1967, pp.47-54


Spivey, B.E. A Technique To Determine Curriculum Content. Journal of Medical Education, 46, 1971, pp.269-274

Stenhouse, L. An Introduction to Curriculum Research and Development. Heinemann: London. 1986


Swanson, J.M., & Chenitz, W.C. Why Qualitative Research in Nursing? Nursing Outlook, April, 1982, pp.241-245


Weinzeirl, S. Staff Nurses as Patient Educators. Diabetes Educator, Fall, 1983, pp.21-24

Whitman, N.A. The Need to Improve Diabetes Education Programs. Diabetes Educator, 7:1, 1981, pp.21-23

Willis, E. Medical Dominance. Allen & Unwin: Sydney, 1983


A PROGRAMME FOR PROFESSIONAL DEVELOPMENT OF DIABETES EDUCATORS

A thesis submitted in partial fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE (HONOURS)

from

THE UNIVERSITY OF WOLLONGONG

by

RHONDA GRIFFITHS, R.N., C.M., Dip.Teach. (Nursing), B.Ed. (Nursing)

Faculty of Health and Behavioural Sciences
1990
APPENDIX 1

A COURSE FOR DIABETES EDUCATORS
ACKNOWLEDGEMENTS

I would like to thank the Education Committee of the Australian Diabetes Educators Association and the staff of the Westmead Diabetes Education Centre who demonstrated a commitment to professional development for diabetes educators by making available existing curricula and contributing valuable suggestions that assisted in the development of the draft curriculum.

I would also like to thank Miss Kirsty Todd who typed this curriculum.

Reproduction of all or any part is not permitted without the permission of the Author.

RHONDA GRIFFITHS
Department of Nursing
The University of Wollongong.

October, 1989.
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rationale</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Introduction</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Philosophical Considerations</td>
<td>2</td>
</tr>
<tr>
<td>1.3 Nomenclature of the Course</td>
<td>4</td>
</tr>
<tr>
<td>1.4 General Aims</td>
<td>5</td>
</tr>
<tr>
<td>2. Course Design</td>
<td>8</td>
</tr>
<tr>
<td>2.1 Objectives</td>
<td>9</td>
</tr>
<tr>
<td>2.2 Curriculum Model</td>
<td>10</td>
</tr>
<tr>
<td>2.3 Student Enrolments</td>
<td>13</td>
</tr>
<tr>
<td>2.4 Formal Teaching</td>
<td>13</td>
</tr>
<tr>
<td>2.5 Course Requirements</td>
<td>13</td>
</tr>
<tr>
<td>2.6 Subjects</td>
<td>13</td>
</tr>
<tr>
<td>2.7 Assessment</td>
<td>14</td>
</tr>
<tr>
<td>3. Course Unit Outlines</td>
<td>15</td>
</tr>
<tr>
<td>3.1 Biological Science</td>
<td>16</td>
</tr>
<tr>
<td>3.2 Pathophysiology and Management of Diabetes Mellitus</td>
<td>19</td>
</tr>
<tr>
<td>3.3 Behavioural Science</td>
<td>22</td>
</tr>
<tr>
<td>3.4 Curriculum Design, Lesson Planning and Teaching Techniques</td>
<td>25</td>
</tr>
<tr>
<td>3.5 Foundations of Teaching and Learning</td>
<td>28</td>
</tr>
<tr>
<td>3.6 The Diabetes Educator as a Manager</td>
<td>30</td>
</tr>
<tr>
<td>Module 1: Organisational Management</td>
<td>30</td>
</tr>
<tr>
<td>Module 2: Managing Patient Care: The Nursing Process</td>
<td>32</td>
</tr>
<tr>
<td>3.7 Communication Theory and Practice and Counselling Techniques</td>
<td>34</td>
</tr>
<tr>
<td>3.8 Health Education and Research Methodology</td>
<td>37</td>
</tr>
<tr>
<td>Module 1: Health Education</td>
<td>37</td>
</tr>
<tr>
<td>Module 2: Research Methods</td>
<td>39</td>
</tr>
<tr>
<td>4. Supervised Clinical Experience</td>
<td>41</td>
</tr>
<tr>
<td>Design</td>
<td>42</td>
</tr>
<tr>
<td>4.1 Requirements</td>
<td>43</td>
</tr>
<tr>
<td>4.1.1 Inpatient Assessment and Education</td>
<td>43</td>
</tr>
<tr>
<td>4.1.2 Attendance at a Diabetes Education Centre</td>
<td>43</td>
</tr>
<tr>
<td>4.1.3 Participation in a Five-Day IDDM Group</td>
<td>44</td>
</tr>
<tr>
<td>4.2 Supplementary Tasks</td>
<td>44</td>
</tr>
<tr>
<td>4.3 Selection of Centre, Supervisor and Date of Clinical Experience</td>
<td>44</td>
</tr>
<tr>
<td>4.4 Assessment</td>
<td>45</td>
</tr>
<tr>
<td>4.5 Supervision</td>
<td>45</td>
</tr>
</tbody>
</table>
### Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Supervised Clinical Experience Objectives</td>
<td>46</td>
</tr>
<tr>
<td>5.1 Inpatient Assessment and Education</td>
<td>47</td>
</tr>
<tr>
<td>5.2 Diabetes Education Centre Placement</td>
<td>49</td>
</tr>
<tr>
<td>5.3 IDDM Group Placement</td>
<td>51</td>
</tr>
<tr>
<td>6. Evaluation of Supervised Clinical Experience</td>
<td>53</td>
</tr>
<tr>
<td>6.1 Evaluation Guides</td>
<td>54</td>
</tr>
<tr>
<td>6.2 Post Evaluation Discussion</td>
<td>54</td>
</tr>
<tr>
<td>6.3 Supplementary Task Checklist</td>
<td>55</td>
</tr>
<tr>
<td>Comments of Supervised Clinical Experience</td>
<td>56</td>
</tr>
<tr>
<td>7. Resources and Monitoring</td>
<td>58</td>
</tr>
<tr>
<td>7.1 Facilities within the University of Wollongong</td>
<td>59</td>
</tr>
<tr>
<td>7.2 External Facilities</td>
<td>59</td>
</tr>
<tr>
<td>7.3 Staffing</td>
<td>59</td>
</tr>
<tr>
<td>7.4 Monitoring of Standards</td>
<td>60</td>
</tr>
<tr>
<td>7.5 Assessment</td>
<td>61</td>
</tr>
<tr>
<td>Appendices</td>
<td>62</td>
</tr>
<tr>
<td>1. Education Evaluation Guide</td>
<td>63</td>
</tr>
<tr>
<td>2. Education/Counselling/Communication Evaluation Sheet</td>
<td>67</td>
</tr>
<tr>
<td>Glossary of Terms</td>
<td>68</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 1  Structure of Course  

Page 13

LIST OF FIGURES

Figure 1  A Model Reflecting the Curriculum Building Process For a Program of Professional Development for Diabetes Educators  

Page 11

Figure 2  The Relationship of Education Experiences to the Achievement of Professional Competencies  

Page 12
1. RATIONALE
RATIONALE

1.1 Introduction

Effective control of diabetes mellitus involves achieving and maintaining skills and knowledge complemented by behaviour modification. Education and training of clients and their families are the foundations of good diabetic therapy providing advantages to health and life of diabetics and social and economic advantages to society.

Diabetes mellitus affects approximately 500,000 Australians. This disease has been shown to be the fifth major cause of death in Australia and is an important cause of death from heart disease and stroke. The estimated cost to the community is about $1.2 billion of which $650 million is directly related to medical treatment.

Patient education is accepted as a vitally important component of a scientific approach to the clinical management of diabetic patients. The relationship between patient education and reduced cost of subsequent health care is also receiving increased attention.

The role of diabetes educators and their contribution to the management of diabetic patients is recognised. The need by these health educators to be thoroughly trained is also recognised.

Diabetes educators come with various backgrounds. They may be nurses, dietitians, social workers and/or psychologists some of whom will and some of whom will not have had training in either diabetes and/or education.

This proposed curriculum, which is comprehensive in nature, is designed to complement the National Training Program developed by the Australian Diabetes Educators Association and the Diabetes Educator Course developed by the Westmead Hospital by providing health educators working in the field or health professionals who would like to do so, with a variety of educational alternatives. An accredited course for diabetes educators offered by a tertiary institution has been sought for some time by ADEA.

The proposed course will provide health professionals with theoretical knowledge and practical skills to enable autonomous practice within a team environment.

In view of changing social patterns and to make this course accessible to all health professionals, it is believed that a facility for study by external mode is appropriate.

1.2 Philosophical Considerations

Health is not a static state, it is a dynamic process involving the interrelationship of physical, psychological, spiritual and social factors. The level of health achieved or level of ill health experienced by an individual is measured along the illness-health continuum. All people do not have the same potential for achieving health, and indeed, health for one may be ill health for another. The health potential for an individual is dependent upon a series of intrinsic (originating from within the individual) and extrinsic (environmental factors).
The purpose and objective of diabetes education is to assist a diabetic patient and his family to achieve and maintain an optimal potential along the health-illness continuum. To achieve this goal requires diabetes educators to incorporate a set of integrating values and approaches that will enhance the health potential of an individual or group.

To be diagnosed as diabetic constitutes both a crisis and a loss for all diabetic patients and their families. For this reason the proposed course utilizes Caplin's crisis theory as the dominant organising element. Incorporated into Caplin's theory is Dunn's theory of high level wellness and Bryne and Thompson's organismic view of man. These theories will be used by diabetes educators to determine educational interventions. The nursing process provides the vehicle for delivery of care to clients.

A simplistic definition of a crisis is an upset in a steady state. Caplin defines crisis as "....the person's emotional reaction to a hazardous event and not to the situation itself". This definition represents the events surrounding a diagnosis of diabetes mellitus and the client's reactions to these events, the loss of body functioning that had previously existed and the introduction of a new mode of functioning.

A crisis is a call to action. In this instance the patient, his family, his diabetes educator and physician will all respond.

Because each patient is an individual with unique needs, interventions will vary between patients, however the goals of each diabetes educator will contain common elements. The focus of health care has moved to health promotion and if possible disease prevention. Diabetes educators will assume an increasingly high profile in community diabetes awareness utilizing the media and public forums. Of course, prevention is not always possible and diabetes educators will be required to utilize a diversity of skills and strategies to facilitate amelioration of existing health problems, restoration of the patient to his former, or higher, level of wellness, rehabilitation to an achievable level of wellness and maintenance of an established level of wellness.

Just as the health needs of a client are unique, so to is his optimal level of health achievement. Dunn's definition of "wellness" accommodates these two concepts...

"High level wellness for the individual is defined as an integrated method of functioning which is orientated toward maximising the potential of which the individual is capable. It requires that the individual maintain a continuum of balance and purposeful direction within the environment where he is functioning."  

To achieve this goal requires diabetes educators to apply not only a body of scientific knowledge and learned skills to individual situations but also to recognise clients as an open system. Man is a complex being, part of a number of groups, a family, a community, a nation, a culture and a universe. Each of these systems reacts upon, and in turn is reacted upon by man.

Each client represents more than a malfunctioning pancreas to his diabetes educator, he is a conglomerate of interactive components that unite to make him different from the next man. This is the concept Bryne and Thompson refer to as the organismic view of man. Therefore it is the role of his diabetes educator to deal with the whole man, body and mind, as he interacts with this environment.
Dunn's concept of high level wellness and the organismic view of man are mutually complementary. Both provide for reciprocal relationships among psychological-social-physical functioning. Man cannot be physically well unless he is spiritually well. To evaluate the level of wellness a diabetes educator is required to be aware of the compensatory processes of man and identify how functioning in one area is affected by functioning in another area.

The Nursing Process is employed to organise patient care and education into an orderly and systematic format.

"Nursing process is conceptualised as a systematic use of knowledge and skills derived from the humanities, science, and nursing theory that is brought to bear on the interaction with a client or group of clients who are experiencing varying levels of wellness within their universe at a given point in time."13

Crisis theory, high level wellness and the organismic view of man provide the theoretical concepts for diabetes education, the nursing process is the systematic approach to delivering diabetes care.

There is a strong trend toward decentralization in our society, a trend mirrored in health care generally and diabetes education in particular. The focus of health care has shifted from a dependency model towards a model designed to support self reliance, self determination, prevention and health education. Skills in problem solving and critical and discriminative thinking will be required by diabetes educators to meet social expectations and changes in the focus of health care.

The professional education experiences for diabetes educators must be associated with the achievement of predetermined competencies. Such competencies should be available through a variety of accredited programs including post-graduate study at a recognised educational facility.

1.3 Nomenclature of the Course

The course consists of two semesters of part-time academic and clinical studies. Students will also be required to attend the university campus for residential schools. Successful completion of the one year course of study will result in an award with the following recommended nomenclature:

Certificate of Diabetes Education
1.4 General Aims of the Course

The professional role of the diabetes educator assumes that a variety of skills, a body of knowledge, a positive attitude and a demonstration of enthusiasm towards the discipline are basic. The proposed course will provide graduates with the following competencies and skills:

Technical Skills

Being able to demonstrate:

- knowledge of the pathophysiology of diabetes
- knowledge of a broad range of management strategies
- knowledge of learning and behavioural theories and changes
- ability to utilize a variety of learning experiences in individual and group situations
- evaluation procedures
- organisation skills for total programming
- development of a unique body of knowledge from research and publication.

Analysis Skills

Being able to:

- assess the suitability of learning experiences, resources and current information
- utilize needs assessment processes
- assess patient performance and adapt programs accordingly
- assess own performance

Appreciative Skills

Demonstrate an awareness of and an ability to respond to:

- the magnitude of life-style changes associated with diabetes
- diverse cultures, value frameworks and differential needs of diabetics
- current trends in the professional area
- varied approaches to program design and teaching
- varied learning environments

Instrumental Skills

Being able to initiate and organize:

- innovative forms of group activities
- leadership training
- resource construction
- policy statements and implementation
- professional development
- the enlistment of community resources
Personal Skills and Interpersonal Skills

Being able to demonstrate:

- sensitivity to individual needs
- exemplary role for other health professionals
- tolerance to ambiguity and uncertainty
- leadership
- creativity
- self-esteem and positive self-image
- involvement in organisations
- desire for future professional development
- ability to relate to others
- work in structured and unstructured settings
- enthusiasm for the profession
- positive attitude.
- tolerance of others.
REFERENCES


2. Ibid., p.3.

3. Ibid., p.6


8. Australian Diabetes Educators Association National Training Programme for Diabetes Educators.


11. Ibid, p.36.


13. Ibid, p.46.
2. COURSE DESIGN
COURSE DESIGN

2.1 Competencies

This course will prepare health professionals to provide optimal care to the diabetic patient and his family by:

1.1 Demonstrating a sound theoretical foundation in biological, psychological and health sciences to provide optimal care to diabetic patients and their families.

1.2 Exercising sound clinical judgement to provide competent diabetes care in a variety of community and institutional settings.

1.3 Recognising the individual needs of diabetic patients and their families.

1.4 Demonstrating a problem solving approach to planning individual diabetes care and education utilizing principles of biological, behavioural and health sciences.

1.5 Identifying and utilizing personnel/agencies, services and educational materials available to complement the diabetes educator and provide additional resources and support for the diabetic patient and his family.

1.6 Exercising critical and discriminative thinking in evaluating the need, process and outcome of diabetes education and care.

1.7 Developing and implementing client education utilizing sound educational principles.

1.8 Communicating to establish and maintain effective interpersonal relationships.

1.9 Initiating and maintaining community diabetes awareness utilizing the media and public forums.

1.10 Recognising the multi-cultural nature of Australian society and the implications of cultural beliefs and values upon the management of diabetes.

1.11 Facilitating the professional development of diabetes educators and other health professionals by providing inservice education and encouraging participation at professional forums.

1.12 Participating in research and interpreting, evaluating and utilizing new knowledge.

1.13 Functioning effectively as a professional member of a health team.

1.14 Being held accountable for the delivery of diabetes care and education.

1.15 Recognising the need for continuing education.

1.16 Maintaining a working knowledge of diagnostic technology and incorporating aids, when appropriate, into the management of diabetic patients.

1.17 Being dedicated to achieving professional recognition for diabetes educators.
2.2 Curriculum Model

Curricula designed for practising health professionals offers an opportunity to move away from learning governed by objectives toward educational experiences that are intrinsic to the experiences and understandings of participants. Educational experiences based upon competencies identified and valued by learners.

This model recognises that diabetes educators will develop the competencies they require for practise from knowledge obtained from two sources: course content and fellow practitioners. Diabetes educators will not only take the information they require to demonstrate competency, they will also be expected to contribute from their service speciality to the developing body of knowledge relating to diabetes education.

Competency based education involves a statement of learner outcomes (competencies) and the criteria to be employed for evaluation. Learners from diverse professional backgrounds with varying levels of clinical expertise are responsible for selecting the information they require to achieve stated competencies.

The learning process is flexible and self-directed, learners are encouraged to seek structured and unstructured settings, combing past and current learning experiences to meet assessment criteria.

A program based upon this model aims to prepare generalist diabetes educators with knowledge and skills to provide total diabetes care to patients. The concept of diabetes care based upon case allocation in preference to the task allocation generally adopted by Diabetes Education Centres is an important development in diabetes education. Case allocation will encourage diabetes educators to provide continuity of care for their patients and strengthen the patient/educator relationship: an holistic approach to diabetes education. Case allocation also facilitates evaluation of patient achievement and professional accountability.

Not all diabetes education takes places in large well equipped Diabetes Education Centres. There are diabetes educators who rely almost exclusively upon their own knowledge base as their major resource. To meet the needs of all diabetes educators, course content is geared to take into account the minimal level of facilities by providing a working knowledge of all disciplines involved in diabetes education.

This is not to suggest that specialist skills will not longer be valued. Educators with specialised skills, knowledge and expertise developed during their practise would be utilized as a team resource and to provide ongoing education for team members.

To reinforce the complimentary nature of theory and practise, assessment requirements will be designed to be completed within the clinical milieu whenever possible.

The curriculum will provide the types of learning experiences that offer students an opportunity to develop skills that have been suggested by researchers as desirable for diabetes educators to possess. These experiences are not limited to the academic setting, but will extend into a variety of institutional, research and other health related settings. Diabetes educators will be recognised as professional health educators only when they demonstrate their capacity to function in accordance with the established criteria for basic competencies. An opportunity for remedial learning experiences in theoretical and/or practical components is also incorporated within the course structure.

The professional education experiences for diabetes educators must be associated with the achievement of predetermined competencies. A program of study to produce diabetes educators with these competencies could be accommodated within the following paradigm:
FIGURE 1. A MODEL REFLECTING THE CURRICULUM BUILDING PROCESS FOR A PROGRAMME OF PROFESSIONAL DIABETES EDUCATORS
FIGURE 2. THE RELATIONSHIP OF EDUCATION EXPERIENCES TO THE ACHIEVEMENT OF PROFESSIONAL COMPETENCIES

Established Professional Role Criteria

Established Training Criteria

Professional Education Experiences

Exposure to programs for diabetic patients

College setting program courses/research/seminar

Participation in education of diabetic patients

Demonstration of competencies

Failure to demonstrate competencies

Qualified Diabetes Educators

Remedial learning experiences
2.3 Student Enrolments

It is anticipated that 10 students will be accepted into the course each year.

2.4 Formal Teaching

Students will attend compulsory residential schools at The University of Wollongong campus.

2.5 Course Requirements

In addition to satisfactory completion of all theoretical subjects satisfactory completion of supervised clinical practice will be a pre-requisite requirement of graduation from the course.

2.6 Subjects

(See following for subject descriptions.)

- Biological Science
- Pathophysiology and Management of Diabetes Mellitus
- Behavioural Science
- Curriculum Design, Lesson Planning and Teaching Techniques
- Foundations of Teaching and Learning
- Diabetes Educator as a Manager
- Communication Theory and Practice and Counselling Techniques
- Health Education and Research Methodology.

**TABLE 1: STRUCTURE OF THE COURSE**

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Session 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Biological Science</td>
<td>- Communication Theory and Practice and Counselling Techniques</td>
</tr>
<tr>
<td>- Pathophysiology and Management of Diabetes Mellitus</td>
<td>- Health Education and Research Methodology</td>
</tr>
<tr>
<td></td>
<td>- Foundations of Teaching and Learning</td>
</tr>
<tr>
<td></td>
<td>- Behavioural Science</td>
</tr>
<tr>
<td>Supervised Clinical Practice</td>
<td>Supervised Clinical Practice</td>
</tr>
</tbody>
</table>
2.7 Assessment

Assessment of course work will be the responsibility of subject Co-ordinators and the School Assessment Committee. Satisfactory completion of the supervised clinical practice will be determined by the Supervisor in consultation with the Co-ordinator of the program and the Head of the Department of Nursing.
3. COURSE UNIT OUTLINES
3.1 BIOLOGICAL SCIENCE

3.1.1 Rationale: This course unit is designed to extend the student's knowledge of the structure and function of the pancreas. The function of the pancreas in maintaining homeostasis and metabolism is emphasised using chemical and physical principles.

3.1.2 Evaluation Criteria: At the completion of this course unit, the students will be expected to:

2.1 describe the anatomy of the pancreas;
2.2 describe the Hepatic and Portal Vascular Systems;
2.3 discuss the chemistry of hormones;
2.4 describe the mechanisms of hormonal release and action;
2.5 list laboratory methods for measuring hormone concentration;
2.6 state the action of insulin;
2.7 describe and compare the structure, metabolism, absorption and function of carbohydrates, lipids and proteins;
2.8 describe the actions of the various hormones that are involved in the regulation of glucose metabolism.
2.9 recognise the effect of stress upon control of diabetes.

3.1.3 Content: 3.1 Gross and microscopic anatomy of the pancreas.
3.2 Hepatic and Portal Vascular systems.
3.3 Mechanisms of hormone action.
3.4 Chemistry of hormones: steroid; protein.
3.5 Cyclic AMP; activation of genes.
3.6 Measurements of hormone concentration: Bioassay; Radioimmunoassay.
3.7 Chemistry and biosynthesis of insulin.
3.8 Carbohydrate Metabolism: glycogenesis; glycogenolysis; tricarboxyl acid cycle (Krebs cycle), glycogen metabolism.
3.9 Metabolic effects of insulin on carbohydrate metabolism: liver uptake; storage and use of glucose; glucose metabolism in muscle; glucose metabolism in other cells.
3.10 Lipid metabolism: synthesis of fatty acids and triglycerides; oxidation of fatty acids; synthesis of triglycerides from carbohydrates; obesity.
3.11 Metabolic effects of insulin on lipid metabolism: Lipolysis; ketogenic and acidotic effect.

3.12 Protein metabolism: synthesis of amino acids, essential and non-essential amino acids.


3.14 Control of insulin secretion: blood glucose; amino acids; gastrointestinal hormones (glucagon, somatostatin); catecholamines; growth hormones; glucocorticoids; estrogen; progesterone.

3.15 Effects of glucagon on: glycogenolysis; gluconeogenesis.

3.16 Regulation of glucagon secretion: blood glucose levels; exercise; amino acids; somatostatin.

3.17 Dietary balance: protein requirements, nitrogen balance; carbohydrate and lipids requirements; utilization of carbohydrates and lipids.

3.18 Nutritional regulation: glucose level; amino acid concentrations; fat metabolites; body temperature.

3.19 Alimentary regulation: gastrointestinal filling.

3.20 Effect of starvation on body tissues.

3.21 The General Adaption Syndrome (GAS) to describe the body's reaction to stress.

3.1.4 Prescribed Text: To be prescribed.

3.1.5 References:


3.2 PATHOPHYSIOLOGY AND MANAGEMENT OF DIABETES MELLITUS

3.2.1 Rationale: The aim of this course unit is to provide students with an understanding of the pathophysiology and management of Type 1, Type 11, and Gestational Diabetes Mellitus. Dysfunction of other body systems developing as a consequence of these disease processes and the related management will also be studied.

The course will require students to undertake a detailed study of the pharmacology, dietetics and current developments in the management of diabetes mellitus.

3.2.2 Evaluation Criteria: At the completion of this course unit, the student will be expected to:

2.1 explain the pathophysiology of diabetes mellitus;
2.2 discuss the incidence, aetiology and prognosis of diabetes mellitus;
2.3 describe the signs and symptoms of diabetes mellitus;
2.4 name the diagnostic tests performed to confirm diabetes mellitus;
2.5 describe the short and long term complications of the disease and the associated signs, symptoms and treatments;
2.6 recognise a hypoglycaemic reaction and describe the management;
2.7 discuss diet therapy in the management of diabetes mellitus;
2.8 describe the action of oral hypoglycaemic agents;
2.9 discuss the role of insulin in the management of diabetes mellitus;
2.10 describe the elements of an exercise program suitable for diabetic patients;
2.11 manage outpatient stabilization;
2.12 plan patient care based upon scientific rationale.

3.2.3 Content: 3.1 Definition and classification - IDDM-NIDDM, Impaired Glucose Tolerance, Gestational Diabetes.
3.2 Aetiology and incidence of diabetes: genetics; environmental factors, autoimmunity.
3.3 Metabolic effects of diabetes: hyperglycaemia, glycosuria, ketosis, mobilization of protein.
3.4 Diagnostic tests: OGTT and diagnostic criteria; post prandial and fasting BSL.

3.5 Insulin assays: glycoslated haemoglobin; glycoslated proteins.

3.6 Insulin: types; action; dosage; absorption; stabilization.

3.7 Administration of insulin: injection techniques; pens, pumps; infusion; sliding scales; patient aids.

3.8 Complications of insulin therapy: hypoglycaemia; lipodystrophy; insulin allergy.

3.9 Oral hypoglycaemic agents: effects on metabolism; insulin action.

3.10 Types; action; dosage; oral failure.

3.11 Indications and contra indications.

3.12 Interaction with other drugs.

3.13 Complications:
Acute - hyperglycaemia, ketoacidosis, hyperosmolar non-ketotic coma, lactic acidosis, hypoglycaemia.
Long-Term - diabetic retinopathy, autonomic and peripheral neuropathy, nephropathy, vascular disturbances, infections, joints.

3.14 Diet: principles of dietary management for IDDM; NIDDM; distribution of kilocalories, calculating appropriate kilocaloric levels; exchange diets.

3.15 Special situations: restaurant meals, sick days; exercise; travel; multi-cultural aspects; surgery; emotional stress.

3.16 Exercise: fuel metabolism; insulin action; suitable exercise, response to exercise; rate/intensity, duration/frequency of exercise.

3.17 Management of diabetic surgical patients.

3.18 Management of patients admitted for diagnostic tests.

3.19 Management of patients admitted for stabilization.

3.20 Management of outpatient stabilization.

3.21 Dental care.

3.22 Management of pregnant diabetics; maternal and fetal complications; labour and delivery; management; family planning and contraception.

3.23 Gestational Diabetes: pathogenesis, criteria for diagnosis, fetal screening tests, management.

3.24 Paediatric and adolescent management.
3.25 Care of the foot: prevention; detection; precipitating factors; common foot problems; treatment.

3.26 Patient education: travel; driving; identification; community resources; HBGM; urine monitoring; injection technique; storage of insulin; record keeping; care of syringes and needles. Foods to avoid: artificial sweeteners; commercial foods; alcohol; planning daily menus; exchange diets.

3.27 Use of portable reflectance meters with and without memory and computer analysis.

3.2.4 Prescribed Text: To be advised.

3.2.5 References:


3.3 BEHAVIOURAL SCIENCE

3.3.1 Rationale: Diabetes Educators implement principles from psychological as well as physiological theories to meet a diversity of needs in their care of diabetic patients and their families. This course introduces students to the traditional fields of psychological study and social institutions such as the family, social class, ethnic groupings, religion, education and the mass media. Together these disciplines will assist Diabetes Educators to locate health care issues within their social context and develop a general and creative understanding of a wide range of situations involving chronic disease.

3.3.2 Evaluation Criteria: At the completion of this unit of study, students will be expected to:

2.1 recognise the relationship of social, community and life-style influences upon an individual's perception of health and ill-health;

2.2 discuss social expectations and the sick role;

2.3 describe crises theory in terms of developmental crises (expected) and unexpected crises: characteristics of a crisis; phases of a crisis, role of the health worker;

2.4 discuss the diabetes educators' role in helping clients undergoing stress to reconstitute;

2.5 discuss conflict, tension and anxiety in relation to stress;

2.6 discuss the reaction of individuals to chronic disease;

2.7 recognise the multi-cultural nature of Australian society and the implications of cultural beliefs and values upon the management of diabetes;

2.8 discuss the nature of professional relationships amongst health workers;

2.9 discuss the nature of the client-doctor relationship;

2.10 recognise the changing role of the client;

2.11 discuss behaviours that may be demonstrated by diabetic patients experiencing grief due to their altered body image;

2.12 illustrate the influence of the mass media upon client compliance.

3.3.3 Content: 3.1 The patient status: the sick role perspective.

3.2 Stages of crises: pre-crisis; crisis, post-crisis.

3.3 Characteristics of a crisis: threat, mounting tension, unresolved problems, turning point.
3.4 Phases of a crisis: tension arises, failure of usual coping mechanism, problem-solving mechanisms, resolution/major disorganisation.

3.5 Defence mechanisms: denial; repression; projection; isolation; undoing; reaction formation.

3.6 Perceptions of health, illness and levels of wellness; health professionals view of high level wellness; society's view of high level wellness; resolution of differences; cultural influences.

3.7 Factors affecting achievement of health potential: intrinsic; extrinsic.

3.8 Tension and coping behaviour.

3.9 Levels of anxiety.

3.10 Models of doctor-client relationship; activity-passivity; guidance-cooperation; mutual participation.

3.11 Professional relationships within the health care team: doctor; educator.

3.12 Grief: initial shock; anger; yearning to regain loss; reorganisation.

3.3.4 PrescribedText: To be advised.

3.3.5 References:


Schwarts, H., Kant, C.  *Dominant Issues in Medical Sociology*. Sydney: Addison-Wesley Publishing Company, 19

3.4 CURRICULUM DESIGN, LESSON PLANNING AND TEACHING TECHNIQUES

3.4.1 Rationale: The course unit provides students with the opportunity to become familiar with the curriculum building process, lesson planning and teaching techniques; skills and knowledge central to the education of diabetic patients.

3.4.2 Evaluation Criteria: At the completion of this unit, students will be expected to:

2.1 develop objectives representing behavioural, affective and psychomotor domains to express outcomes of patient education;

2.2 use a variety of audiovisual equipment;

2.3 design and develop teaching aids for use during demonstration lessons;

2.4 demonstrate the sequential development of an education programme;

2.5 identify curriculum theories suitable for diabetes education programmes;

2.6 apply information and ideas to their own working environment.

2.7 develop teaching lessons utilizing a variety of appropriate teaching techniques;

2.8 undertake evaluating of programs, patient outcomes and educator skills.

3.4.3 Content: 3.1 Criteria for curriculum development: establishing a need; resource unit, teaching unit; elements of programme; format.

3.2 Curriculum models: subject based (traditional) models; modified rationale planning model; problem solving; mastery learning; eclectic models; competence-based education.

3.3 Criteria for formulating objectives: evidence of achievement; condition for performance; levels of performance.

3.4 Bloom's Taxonomy.

3.5 Taxonomy of Learning Tasks (Gange).

3.6 Definition of aims and objectives.

3.7 Elements of lesson plan.
3.8 Teaching strategies - advantage; disadvantage; characteristics; application of: formal lectures; discussion groups; individual instruction; formal and informal settings; techniques for clinical instruction; demonstrations; tutorials; role play; stimulation; games; modelling.

3.9 Audiovisual equipment: overhead projector; slide tape sequence; video; film projector.

3.10 Teaching aids: chalk/white board; charts; posters; displays; pathology specimens; models.

3.11 Reinforcement: questioning; basic and advanced explaining.

3.12 The purpose of evaluation in patient education and programme development.

3.13 Integrating evaluation into patient education and programme development, pre-testing, post-testing, formative and summative evaluation, criterion referenced and normal referenced.

3.14 Criteria of measurement and evaluation: quantitative and qualitative design; tools; reliability and validity; administrative convenience.

3.15 Assessment of learning and performance: testing methods; self evaluation; peer review.

3.16 Selection of appropriate methods of testing cognitive learning and psychomotor skills.

3.17 Objective testing - purpose; advantages; disadvantages.

3.18 Developing objective tests - general principles; formats.

3.19 Questionnaire development.

3.20 Patient assessment - by the educator; by the patient; in groups.

3.21 Evaluation of educators - by self; by patients.

3.22 Course evaluation - by the educator; by the students; independent evaluation.

3.4.4 Prescribed Text: To be advised.

3.4.5 References:


3.5 FOUNDATIONS OF TEACHING AND LEARNING

3.5.1 Rationale: Learning is a dynamic and active process in which educators can optimise their effectiveness by being aware of factors that enhance or interfere with learning. By introducing diabetes educators to the teaching/learning process, this course unit will facilitate effective patient education, an essential component of diabetes management.

3.5.2 Evaluation Criteria: At the completion of this course unit, students will be expected to:

2.1 describe learning theories;
2.2 explain the relationship between personality theory and learning;
2.3 discuss the nature and importance of motivation in learning;
2.4 discuss the application of learning principles to diabetes education;
2.5 develop client education according to learning abilities and needs of clients;
2.6 differentiate between principles of andragogy and pedagogy;
2.7 interpret the theory of group dynamics.

3.5.3 Content: 3.1 Behavioural Theories: stimulus-response; operant conditioning; classical conditioning; behavioural modification. Cognitive Theories (Bruner). Humanistic Theories (Dewey): self direction; self evaluation; role of the teacher. Personality Theory (Erikson): self-esteem; moral judgement; social knowledge; prejudice; peer groups; personality traits.
3.2 Influence of motivation on learning: nature; related concepts; reinforcement; goals achievement; hierarchy of motives (Maslow).
3.3 Personality and motivation: need to achieve; need for approval; avoid failure; locus of control; motivation training; affiliation and power.
3.4 Intrinsic and extrinsic motivation: motivational contracts; motivational systems; motivational techniques; social influences on motivation.
3.5 Andragogical theory (Knowles).
3.6 Pedagogical theory (Piaget).
3.7 Types of groups: therapeutic; decision making; learning; research; problem solving; evaluation.
3.8 Discriminates of behaviour in groups.
3.9 Leadership styles: directive; decisive; authoritarian; democratic; task-centred; people-centred.

3.10 Factors affecting participation in groups: physical environment; personal environment; group composition; group structure; task environment.

3.11 Optimising group effectiveness: communication; evaluation; control; decision making; tension reduction; reintegration.

3.12 Interactions between group members: Bales' Interaction Process Analysis.

3.13 Short term memory, long term memory; retrieval; meaningfulness; mediators; advance organisers; hierarchial structure; organisation.

3.5.4 Prescribed Text: To be advised.

3.5.5 References:


3.6 THE DIABETES EDUCATOR AS A MANAGER

Module 1: Organisational Management

3.6a.1 Rationale: This module introduces diabetes educators to organisational structure and function. A knowledge of factors that determine how and why organisations function as they do will enable diabetes educators to participate in the organisation's decision making process effectively.

3.6a.2 Evaluation Criteria: At the completion of this course unit, students will be expected to:

2.1 describe the bureaucratic organisation;
2.2 discuss the functioning of a diabetes education centre within an organisation;
2.3 discuss the organisation as a social system;
2.4 formulate management goals for implementation in their work environment;
2.5 cognize the role of committees in an organisation;
2.6 plan for appropriate change;
2.7 initiate quality assurance programmes.

3.6a.3 Content: 3.1 Components of structure.
3.2 Advantages and limitations of bureaucracy - division of labour; hierarchy; lines of communication.
3.3 The importance of division of labour.
3.4 Advantages and disadvantages of a wide span of administration.
3.5 Need for departmentation.
3.6 Types of authority and chain of command: line; staff; functional.
3.7 Delegation: authority and responsibility; accountability.
3.8 Bases of power: coercive; reward; expert; referent.
3.9 Leadership styles: laissez-faire; authoritarian; democratic.
3.10 Organisation goals: legal; functional; technical; project making; personal; public; effectiveness; efficiency; economic management goals.
3.11 Communication roles in organisations: gatekeepers; liaisons; opinion leader; cosmopolites; networks.
3.12 Management committees: power; membership; feedback mechanisms, productivity, functions.

3.13 Committee leadership skills: preparing the environment; preparation of participants and leader; structuring.

3.14 Continuity; change cycle.

3.15 Implementation of change: activity plan; strategic plan.

3.16 Politics of change: resistance to change; trade-offs; compromise.

3.17 Negotiation: dynamics of collective bargaining.

3.18 Evaluating change and continuity: base line data; effectiveness; efficiency; satisfaction.

3.19 Application of change: management by objectives; conflict theory.

3.20 Diabetes Educator as a manager: administrative authority; professional authority; role ambiguity.

3.21 Motivational theories - Helzberg; Maslow; McGregor.

3.22 Quality Assurance: models; methods of implementation; assessing outcome.

3.6a.4 Prescribed Text: To be advised.

3.6a.5 References:


Module 2: Managing Patient Care: The Nursing Process

3.6b.1 Rationale: The Nursing Process is included in this curriculum to provide diabetes educators with a model for organising systematic care and education based upon scientific reasoning.

Studying this course will also encourage diabetes educators to look critically at their own practice with a view to developing improved approaches to the needs of their patients.

3.6b.2 Evaluation Criteria: At the completion of this module, students will be expected to:

2.1 plan patient care from a scientific approach;
2.2 critically analyse diabetes education and the methods of providing client care;
2.3 adopt a planned systematic approach to client care;
2.4 design a data collection tool demonstrating planned, systematic client care;
2.5 plan for continuity of care/education.

3.6b.3 Content: 3.1 High level wellness: health-illness continuum (Dunn).
3.2 The Nursing process: assessment; planning; implementation; evaluation.
3.3 Nursing diagnosis: data collection; observation; deliberation; judgement; choice.
3.4 Problem solving process.
3.5 Professional accountability, autonomy and decision making.
3.6 Documentation: advantages of plans for education and care; developing education/care plans.
3.7 Quality Assurance and client care: random audits; retrospective audits.

3.6b.4 Prescribed Text: To be advised.

3.6b.5 References:


3.7 COMMUNICATION THEORY AND PRACTICE AND COUNSELLING TECHNIQUES

3.7.1 Rationale: This course attempts to enhance personal and professional development by providing an opportunity for participants to develop communication skills and an understanding of, and beginning skills in, patient counselling.

3.7.2 Evaluation Criteria: At the completion of this course unit, students will be expected to:

2.1 discuss communication theory in terms of channels of communication, barriers to effective communications, and techniques to enhance effective communications;

2.2 demonstrate effective personal and professional communication skills;

2.3 differentiate between aggression and assertiveness;

2.4 demonstrate developing expertise in communication and interviewing skills, especially as they apply to helping situations;

2.5 demonstrate a knowledge of several counselling theories as well as a personal perspective in relation to one or more of these theories;

2.6 demonstrate competence in attending, listening and responding skills;

2.7 design programs to help facilitate change in those who seek to change;

2.8 appreciate one's own limitations as well as strengths as a counsellor;

2.9. be aware of community resources in existence;

2.10 be prepared to refer individuals to persons at other agencies when appropriate.

3.7.3 Content: 3.1 Non verbal communication: body language; personal space; use of time.

3.2 Verbal communication: jargon; rationalisation; congruence; incongruence.

3.3 Communication networks: group; social context.

3.4 Interpersonal communication: self disclosure; initiating; stabilizing; deterioration.

3.5 Listening skills: passive, reflective, silence.
3.6 Assertive behaviour: beliefs; rights; statement of reality; giving and receiving information; giving praise; giving criticism; feedback; confrontation.

3.7 Communications for improving interpersonal relationships: description of behaviour, description of feelings.

3.8 Theories of aggression: instinct (McDougall); ethological (Lorenz); aggressive drive; social learning.

3.9 Self concept formation: reflected appraisals; social comparison; self attribution; psychosocial centrality; personal aspiration; motivation; self-alienation.

3.10 Communication process in counselling.

3.11 Counsellor listening responses: paraphrasing; clarification; reflection; summarizing.

3.12 Action responses: probing; ability-potential response; confrontation; interpretation.

3.13 Counsellor as a facilitator: sharing responses; teaching responses.

3.14 Behaviour modification: modelling reinforcement; contingency management; shaping new behaviours; extinction.

3.15 Affective Theories: client centred therapy (Rogers); psychoanalysis (Freud); gestalt (Perls).

3.16 Cognitive Theories: trait-and-factor (Williams); rational-emotive (Ellis).

3.17 Behavioural Theories: behaviour (Skinner); reality (Glasser).

3.18 Ethical considerations in counselling.

3.7b.4 Prescribed Text: To be advised.

3.7b.5 References:


Module 1: Health Education

3.8a.1 Rationale: There is a growing concern with health promotion at the individual, community and national level. Quality of life shares equal importance with length of life and accordingly the focus of health care is shifting from a dependency model towards a model designed to support self reliance, self determination, prevention and health education.

This module is designed to offer students an opportunity to develop interventions designed to encourage individuals to accept more responsibility for their own health.

Students will also be encouraged to develop their own philosophy of diabetes education and the role of the Diabetes Educator.

3.8a.2 Evaluation Criteria: At the completion of this module, students will be expected to:

2.1 discuss various health education strategies;
2.2 examine current issues in health education;
2.3 review resources available in their work situation;
2.4 describe methods of evaluating health education programmes;
2.5 develop health education programmes for special groups.

3.8a.3 Content: 3.1 Choosing a strategy/programme: reliability, validity, ease of administration; relevance.

3.2 Programme strategies for individuals: self confrontation; cognitive restructuring; modelling; operant conditioning; volunteer conditioning; stimulus control.

3.3 Programme strategies for groups: social networks; social support; self-help.

3.4 Community approaches to changing behaviour: voluntary change; legislative authority; environmental changes.

3.5 Evaluation terminology: formative evaluation; process evaluation; summative evaluation; programme impact evaluation.

3.6 Factors affecting achievement of health potential: intrinsic; extrinsic.

3.7 Developing a Health Protection/Promotion Plan: assessment data; self-care strengths of client; identifying health goals; commitment to behaviour change; reinforcements; rewards; barriers to change; time plan.
3.8 Advertising as a means of social control.

3.9 Media access for diabetes educators.

3.8a.4 Prescribed Text: To be advised.

3.8a.5 References:


Module 2: Research Methodology

3.8b.1 Rationale: This module provides an overview of quantitative and qualitative research methods. Through the process of systematic and controlled collection and testing of empirical data, diabetes educators can improve their practice, leading to the improvement of patient care and an increase in work satisfaction for the practitioner.

3.8b.2 Evaluation Criteria: At the completion of this course of study, students will be expected to:

2.1 define research in terms of qualitative, quantitative, descriptive, exploratory, experimental design;

2.2 select appropriate methods for each type of research;

2.3 understand the problems and ethical considerations in conducting research into clinical practice;

2.4 establish and test hypothesis using appropriate statistical tests for simple problems;

2.5 present statistical analyses in appropriate format;

2.6 critique research reports;

2.7 design and implement a simple research project.

3.8b.3 Content: 3.1 Research process: the problem; literature review; developing a theory; hypothesis; variables; measurement; design; population; data collection; analysis; interpretation; communicating results.

3.2 Application of qualitative and quantitative research methods.

3.3 Survey research design; sampling; developing questionnaires; processing data; applications; disadvantages and advantages.

3.4 Case studies; participant observations; recording observations.

3.5 Exploratory research; objective; characteristics; advantages and disadvantages.

3.6 Ex post facto research: co-relational; criterion group study.

3.7 Design: characteristics; procedures; advantages and disadvantages.

3.8 Experimental design; pre-experimental design; quasi-experimental design.

3.9 Variables: independent; dependent.

3.10 Validity: internal; external.
3.11 Reliability.
3.12 Hawthorne effect.
3.13 Ethical considerations in research.
3.14 Statistical methods: sampling; probability; inferential; population.
3.15 Ranking scales: ratio; ordinal, nominal.
3.16 Frequency distribution of ungrouped data: raw score, frequency.
3.17 Frequency distribution of grouped data: class interval.
3.18 Measures of central tendency: mean; median; mode; summation.
3.19 Graphical presentation of data: histogram; bar graphs; pie charts; frequency polygon.
3.20 Statistical significance.
3.21 Measures of dispersion: range; standard deviation.
3.22 Standard score.
3.23 Normal distribution curve.
3.24 Presentation of categorical data.
3.25 Criteria for evaluating research.

3.8b.4 Prescribed Text: To be advised.

3.8b.5 References:

Brink, P., Wood, M. Basic Steps in Planning Nursing Research From Question to Proposal. (2nd ed.) California: Wadsworth Health Sciences, 1983


4. SUPERVISED CLINICAL EXPERIENCE
SUPERVISED CLINICAL EXPERIENCE DESIGN

Supervised clinical experience will be undertaken by students throughout the course. Students will be required to:

1. attend a hospital for five days observing medical, education, podiatry and dietary consultations and screening for long term complications and participate in inpatient education.
2. attend a Diabetes Education Centre for five days, participating under supervision in individual education/counselling of inpatients and outpatients,
3. participate in one 5-day IDDM Group.

Each student will be required to nominate a supervisor for the duration of the clinical experience.

Level of student performance will be assessed by means of clinical experience evaluation completed by the supervisor and student.
4.1 REQUIREMENTS

1 INPATIENT ASSESSMENT AND EDUCATION:

4.1.1 Students currently employed as diabetes educators at hospitals that have facilities for patient consultations with an endocrine team, podiatrists, dietitians, ophthalmological and neurological screenings and inpatient stabilization are required to organise with their supervisor (an experienced diabetes educator) to certify that they have undertaken a minimum of 15 hours observation/inpatient education.

4.1.2 Students not currently working as diabetes educators in areas with these resources are required to organise a FIVE DAY CLINICAL PERIOD at a hospital with these facilities during which time they will:

a. be in attendance for the duration of five shifts;
b. observe/assist in consultations for a minimum of 15 hours;
c. undertake the supplementary tasks specified;
d. participate in client review/case discussions;
e. organise for an experience diabetes educator to comment upon their period of observation.

Although some students will be able to fulfil all requirements for supervised clinical experience at their place of employment, they may, if they wish to, and indeed will be encouraged to, undertake one or more placements at other Diabetes Education Centres. To undertake placements in a variety of locations will be a valuable adjunct to their professional development as diabetes educators.

2 ATTENDANCE AT A DIABETES EDUCATION CENTRE:

4.1.3 Students currently employed as diabetes educators are required to organise with their supervisor (an experienced diabetes educator) to certify that they have undertaken a minimum of 15 hours educating/counselling patients, have had FIVE client interviews supervised, and write a report upon their education/counselling. Students will be required to observe and evaluate experienced diabetes educators.

4.1.4 Students not currently working as diabetes educators are required to organise a FIVE DAY CLINICAL PERIOD at a Diabetes Education Centre during which time they will:

a. be in attendance for normal Centre hours (e.g. 8.30am - 4.00 pm);
b. observe/participate in a minimum of 15 hours educating/counselling patients;
c. undertake the supplementary tasks specified;
d. participate in client review/case discussion;
e. observe/participate in outpatient stabilization where possible;
f. observe and evaluate experienced diabetes educators; and

g. organise for an experienced diabetes educator to supervise at least FIVE of their patient interviews and write a report upon their education/counselling.
3 PARTICIPATION IN A 5-DAY IDDM GROUP:

4.1.5 Students currently employed as diabetes educators at centres conducting education in groups for IDDM are required to organise with their supervisor (an experienced diabetes educator) to certify that they have participated in a minimum of five days (continuously or individually) group education/counselling, have had FIVE teaching sessions supervised and write a report upon their teaching.

4.1.6 Students not currently working as diabetes educators at centres that undertake group education, are required to organise to attend and participate in a FIVE DAY IDDM GROUP, at a Diabetes Education Centre during which time they will:

a. be in attendance for normal centre hours (e.g. 8.30am - 4.00pm);
b. observe/participate in all group activities;
c. undertake the supplementary tasks specified;
d. participate in client review/case discussion;
e. observe and evaluate experienced diabetes educators; and
f. organise for an experienced diabetes educator to supervise at least FIVE of the teaching topics and write a report upon their teaching.

4.2 SUPPLEMENTARY TASKS:

4.2.1 In addition to client interviews/group education/hospital observations, students are required to participate in the daily functioning of the centre and carry out a number of other specified tasks. These tasks will be specified in the behavioural objectives and are divided into two categories:

i. those to be checked by your supervisor (see checklist); and

ii. the "Self-Evaluation of Practice" to be checked by the co-ordinator of Supervised Clinical Experience.

4.3 SELECTION OF CENTRE, SUPERVISOR AND DATE OF CLINICAL EXPERIENCE:

4.3.1 Students are responsible for organising with the Centre involved for their clinical experience.

4.3.2 Students are also responsible for selecting the supervisor and date of practice. Supervisors must be experienced diabetes educators. His/her appointment must also be approved by the Centre Co-ordinator.
4.4 ASSESSMENT:

4.4.1 Successful completion of the three supervised clinical experiences is a prerequisite for satisfactory completion of the course.

If an unsatisfactory assessment is made, an additional experience period will be required by the University involving another experienced diabetes educator. Where appropriate additional supervision and other remedial action by University staff may be required.

4.4.2 An overall assessment of each clinical experience will be graded as: Very Satisfactory (VS); Satisfactory (S); or Not Satisfactory (NS).

4.4.3 Report Form:

i. Sample Supervised Clinical Experience evaluation guides are included as an appendix to the curriculum.

ii. The guides are to be completed in duplicate by the supervisor and signed by both the supervisor and student.

iii. The original is returned to the Co-ordinator of supervised clinical experience at The University of Wollongong.

4.5 SUPERVISION:

4.5.1 Two or more supervisors is allowable provided the centre co-ordinator agrees. Such a situation is frequently desirable providing for the input of a wide cross section on ideas and expertise. Multiple supervisors also allow for flexibility in the administration of the centre. All supervisors must be experienced diabetes educators.

4.5.2 Critically evaluating experienced diabetes educators is an important and valid requirement for students. This practice can be undertaken without antagonism if all parties are aware:

i. of the purpose of the observation; and

ii. that a critical evaluation implies looking at strengths as well as problems in teaching/counselling style.

Indeed in these instances the emphasis is upon highlighting the strengths of the experienced practitioner.

4.5.3 Post-lesson discussion is a vital aspect of the observations as it provides an opportunity for supervisors and students to interact, discuss comments and explain decisions and actions.
5. SUPERVISED CLINICAL EXPERIENCE OBJECTIVES
5.1 INPATIENT ASSESSMENT AND EDUCATION

5.1.1 Rationale: This placement offers students an opportunity to observe each member of the diabetes team, identifying the scope and parameters of their work.

Diabetes Educators working in centres attached to hospitals with these resources will have an opportunity to broaden their scope of practice and communication networks with staff working within an institution. They will also be afforded the opportunity to assess staffs' interpretation of community based diabetes education, the role and function of the Diabetes Centre and the process of outpatient stabilization.

For students not working in institutions offering extensive support and resource personnel, this clinical experience will provide the opportunity not only for observation but for establishing resource networks for future referral. Such resources are invaluable for Diabetes Educators working alone.

5.1.2 Evaluation Criteria: At the completion of this clinical experience, students will be expected to:

2.1 assess the needs of diabetic patients (and their families) who have been hospitalised for:
   - stabilization
   - CSII pump management
   - newly diagnosed diabetes
   - acute complications
   - long term complications
   - conditions unrelated to diabetes
   - surgery
   - gestational diabetes;

2.2 plan, implement and evaluate appropriate education utilizing a needs approach;

2.3 introduce inpatients to the role and functions of the Diabetes Centre if appropriate;

2.4 recognise the role of multidisciplinary team conferences and ward rounds in co-ordinating optimum patient care;

2.5 participate in ward rounds and team conferences;

2.6 describe diagnostic tests and technical aids used in the management of diabetes;

2.7 take cognizance of cultural customs when planning patient care and education;

2.8 competently care for diabetic patients in the hospital environment;

2.9 plan patient care according to identified deficits/needs, goals of treatment, and expected outcomes;
2.10 evaluate patient care against expected outcomes and the patient's condition and adjust care as necessary;

2.11 recognise and treat hypoglycaemic episodes appropriately;

2.12 demonstrate effective interpersonal skills with patients and health professionals;

2.13 demonstrate mastery in the use of blood glucose reflectance meters and reagent strips in use and currently available; provide patient education and practice in urine and blood monitoring, insulin injections and care of meters and strips;

2.14 accurately assess the patients' techniques in performing blood glucose estimations and calibration and care of the meter, strips, insulin injection techniques and urine testing;

2.15 liaise with ward staff regarding the educational needs of patients;

2.16 assume a resource role for diabetes education and related counselling for other health professionals;

2.17 participate in establishing and reviewing protocols/procedures for the care and education of diabetic patients with regard to current developments and standards.
5.2 2 DIABETES EDUCATION CENTRE PLACEMENT

5.2.1 Rationale: This placement offers students an opportunity to observe and participate in individual consultations with diabetic patients.

Diabetes Educators already working in centres will have the opportunity for peer review and evaluation; essential undertakings for professionally creditable Diabetes Educators. This period of supervision also accords them the opportunity of reviewing and critically analysing their client education/counselling strategies and techniques.

For students not working as Diabetes Educators or working in isolation, this experience will offer a valuable opportunity for observation and practice of education and counselling skills, developing contacts and establishing communication networks, becoming familiar with the operation of a Diabetes Education Centre and increasing their awareness of the qualities of a competent Diabetes Educator.

5.2.2 Evaluation Criteria: At the completion of these practical experiences, students will be expected to:

2.1 demonstrate basic skills in communication and counselling to enhance interpersonal relationships with clients and health professionals;
2.2 employ a problem solving approach to diabetes education;
2.3 demonstrate appreciation of the emotional and education needs of diabetics and their families;
2.4 identify services available to diabetics with specific needs for care and education;
2.5 be familiar with stabilization procedures;
2.6 recognise different cultural perceptions and reactions to chronic illness;
2.7 address individual reactions to chronic illness in the context of patient education;
2.8 describe the role and function of a Diabetes Clinic, recognising the multidisciplinary nature of diabetes education;
2.9 take a history for each patient;
2.10 assess the immediate and longer term learning needs of patients attending a diabetes clinic and plan for ongoing education;
2.11 identify, in consultation with the patient, areas of need, goals of education, appropriate educational interventions and expected outcomes;

2.12 utilize teaching techniques and strategies appropriate to individual instruction and assess their advantages and disadvantages for diabetes education;

2.13 demonstrate skills in questioning and reinforcement;

2.14 demonstrate increasing depth of knowledge and comprehension of subject matter;

2.15 select teaching strategies appropriate to the learning needs and cognitive ability of individual patients and provide remedial instruction as necessary;

2.16 accept constructive criticism from others;

2.17 contribute to discussions on educational issues, supporting position by reference to writers, research findings and personal experience;

2.18 demonstrate mastery in the use of blood glucose reflectance meters, blood reagent strips and urine strips;

2.19 accurately assess patients' techniques when performing monitoring tests and in calibration and care of meters and strips;

2.20 inform diabetics and their families of community resources and procedures for obtaining supplies;

2.21 evaluate the outcomes of patient education utilizing a variety of measures;

2.22 assume a consultancy role for diabetes education and related counselling to other health professionals;

2.23 establish and review protocols/procedures for care/education of diabetic patients with regard to current developments and standards.
5.3 3 IDDM GROUP PLACEMENT

5.3.1 Rationale: This placement offers students an opportunity to observe and participate in a group education programme for IDDM.

Diabetes Educators working in centres with established group education programmes are encouraged to review their programmes and critically analyse participants' evaluation of the group and their overall level of achievement of objectives during the time allocated to supervised clinical experience. Students not working as Diabetes Educators, or working in centres that do not educate clients in groups, will have an opportunity to observe group dynamics, participate in group education, practice amelioration techniques with clients if necessary, and establish communication networks with other Diabetes Educators.

5.3.2 Evaluation Criteria: At the completion of this practical experience, students will be expected to:

2.1 demonstrate basic skills in communication and counselling to enhance interpersonal relationships with patients and health professionals;

2.2 employ a problem-solving approach to diabetes education;

2.3 demonstrate appreciation of the emotional and educational needs of diabetics and their families;

2.4 describe the role and function of a diabetes education and stabilization programme;

2.5 define the role of each team member, appreciating the function of a multidisciplinary team;

2.6 recognise different cultural perceptions and reactions to chronic illness;

2.7 undertake individual counselling with group participants when appropriate;

2.8 utilize small group techniques and observe the group process;

2.9 utilize strategies to optimise the educational experience for all group members;

2.10 apply a variety of instructional techniques and assess their advantages and disadvantages for diabetes education in the group context;

2.11 demonstrate skills in questioning and reinforcement;

2.12 demonstrate an increasing depth of knowledge and comprehension of subject matter;
2.13 approach different styles of teaching and programme format with an awareness that there is no style or model that is applicable for all circumstances;

2.14 accept constructive criticism from others;

2.15 contribute to discussions on educational issues, supporting views by reference to writers, research findings and personal experience;

2.16 demonstrate mastery in the use of blood glucose reflectance meters, blood reagent strips and urine strips;

2.17 accurately assess patients' techniques when performing monitoring tests and in calibration and care of meters and strips;

2.18 accurately assess patients' injection techniques and care of insulin and equipment;

2.19 evaluate outcomes of patient education utilizing a variety of measures;

2.20 inform diabetics and their families of community resources.
6. EVALUATION OF SUPERVISED CLINICAL EXPERIENCE
6.1 Evaluation Guides

Samples of two evaluation guides are included in the appendix to this curriculum. Either form can be used by supervisors and students according to the setting.

A structured format is not appropriate for some group work, discussions etc. However, in these instances, although the teacher is not the centre of the instruction, he/she should normally:

a. set the scene for the session (i.e. explain the objectives of the session);
b. meaningfully supervise participants activity;
c. if appropriate, engage in remedial activity with individual participants;
d. demonstrate counselling and communication skills commensurate with experience, utilizing other resource when appropriate; and,
e. bring the session to an appropriate closure through group discussion and review.

The educator's role as an organiser, guide and facilitator of learning would in these instances assume greater significance in the supervisor's evaluation.

6.2 Post Evaluation Discussion

The importance of students discussing evaluations with their supervisors cannot be over-emphasised. This discussion provides an environment in which considerable learning can take place as a result of the interchange of ideas. The Evaluation Guides provide a starting point for constructive evaluation.
### 6.3 Supplementary Task Checklist

To be completed by student and initialled by supervisor:

<table>
<thead>
<tr>
<th>Task</th>
<th>Sup. Sig.</th>
<th>Task</th>
<th>Sup. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Used a variety of the following aids:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chalk/white board</td>
<td></td>
<td>Videos</td>
<td></td>
</tr>
<tr>
<td>Overhead projector</td>
<td></td>
<td>16mm film projector</td>
<td></td>
</tr>
<tr>
<td>Charts</td>
<td></td>
<td>Slide projector</td>
<td></td>
</tr>
<tr>
<td>Models</td>
<td></td>
<td>Handouts</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. Used a variety of the following Instructional Techniques:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal lectures</td>
<td></td>
<td>Games/stimulations</td>
<td></td>
</tr>
<tr>
<td>Group discussion</td>
<td></td>
<td>Teaching through supervision</td>
<td></td>
</tr>
<tr>
<td>Individual research</td>
<td></td>
<td>Audio tutorials</td>
<td></td>
</tr>
<tr>
<td>Small group research</td>
<td></td>
<td>Video tutorials</td>
<td></td>
</tr>
<tr>
<td>Demonstrations</td>
<td></td>
<td>Guest speakers</td>
<td></td>
</tr>
<tr>
<td>Role plays</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. Discussed developments in diabetes education and problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>associated with group programmes/individual consultations with your</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>supervisor and other Diabetes Educators.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv. Critically evaluated the value of the Supervised Clinical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience, e.g.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What are its strengths and weaknesses?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How does it compare to other programmes?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How valuable are the observation sheets?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How can it be improved?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
COMMENTS OF SUPERVISED CLINICAL EXPERIENCE

Comments by Student:
(Attach additional pages, if necessary)

Comments by Supervisor:
(Attach additional pages if necessary)
Remedial strategies if applicable:
(Attach additional pages, if necessary)

In the event that remedial strategies are considered to be necessary, the student will be required to consult a lecturer from the University.
7. RESOURCES AND MONITORING
RESOURCES TO BE UTILIZED

7.1 FACILITIES WITHIN THE UNIVERSITY OF WOLLONGONG

7.1.1 The University Library

The University library contains resource materials required by students enrolled in Education, Physical Education, Health Science, Psychology and Sociology. These resources will be available to students and staff. To supplement the collection of monographs and journals, inter-library facilities are available to staff and students. All staff and students are encouraged to use The Wollongong Hospital library. Library facilities are also available to Graduates of the University and staff and students of the Wollongong College of Technical and Further Education, as well as people from local commerce and industry. The library is opened between the hours of 9.00 am to 10.00 pm, Monday to Thursday, 9.00 am to 5.00 pm, Friday and Saturday, and 1.00 pm to 5.00 pm on Sunday.

7.1.2 The Centre for Teaching Development

The expertise of staff and the equipment and facilities available permit the centre to offer the following comprehensive services:

- assistance in the design, implementation and evaluation of media materials related to teaching programmes, for example television, tape-slide, audio-visual materials;
- provision of a central pool of media equipment;
- provision of educational media facilities for student production and media materials.

7.1.3 General Teaching Facilities

The normal teaching facilities of The University of Wollongong will be made available. These include general lecture rooms equipped with audio-visual facilities and specialist lecture rooms in areas such as science and microbiology.

7.2 EXTERNAL FACILITIES

The Illawarra Area Health Service Library housed at The Wollongong Hospital, has a selection of monographs and journals to supplement the University library.

7.3 STAFFING

All appointees who contribute to the proposed course will be selected on the basis that they possess academic qualifications and clinical experience acceptable to The University of Wollongong. In addition, medical and other specialist staff will be invited to contribute to the course on a sessional basis.
7.4 MONITORING OF STANDARDS

Mechanisms for monitoring the academic standards of the course will be those already operative in the University. The supervised clinical experience will be monitored by University staff, in conjunction with experienced Diabetes Educators nominated by the student and approved by the University.

Staff involved in both the academic and clinical aspects of the course will be represented on all committees concerned with the monitoring of the academic and experiential components of the course.
7.6 ASSESSMENT

7.6.1 Preamble

To successfully complete this course, students shall:

i. comply with the requirements of The University of Wollongong;

ii. successfully complete the prescribed course within six academic sessions of part-time study by the external mode. This specified period, however, may be extended in special circumstances.

7.6.2 Course Units and Assessment

Assessment of course work will be the responsibility of Subject Co-ordinators.

7.6.3 Gradings

Student performance will be graded as:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD</td>
<td>High Distinction</td>
</tr>
<tr>
<td>D</td>
<td>Distinction</td>
</tr>
<tr>
<td>C</td>
<td>Credit</td>
</tr>
<tr>
<td>P</td>
<td>Pass</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
</tr>
<tr>
<td>VS*</td>
<td>Very Satisfactory</td>
</tr>
<tr>
<td>V*</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>NS*</td>
<td>Not Satisfactory</td>
</tr>
<tr>
<td>WE</td>
<td>Incomplete</td>
</tr>
<tr>
<td>E</td>
<td>Exemption in terms of &quot;Advanced Standing&quot; policy</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawal without penalty.</td>
</tr>
</tbody>
</table>

*Supervised Clinical Practice.

7.6.4 Incomplete Results

An incomplete grading may be granted to students under special circumstances, for example, absence from an examination due to illness. Application for an incomplete grading shall be made as soon as possible after the special circumstance becomes apparent, to the Head of School and include:

i. name;
ii. course unit title and lecturer;
iii. reason for application (the plea of illness must be supported by a medical certificate).
APPENDICES
This is a guide for evaluation of patient group and individual education. Space is provided below each category for brief notes. In addition, you can tick the relevant category: VS (very satisfactory); S (satisfactory); NA (needs attention).

This record is intended primarily to help the diabetes educator acquire and/or improve teaching skills. A discussion between the educator and supervisor should take place as soon as possible after the observation. Comments will also assist planning of course work. This document is to be retained by the diabetes educator and forwarded to the University at the completion of clinical practice.

<table>
<thead>
<tr>
<th>VS</th>
<th>S</th>
<th>NA</th>
<th>Questions to Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>A. PREPARATION</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. Objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Were the objectives:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- clearly specified?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- appropriate?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Lesson Aids</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Were the aids well prepared?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Were they interesting?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Content</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Was the content:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- accurate?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- reflecting recent research?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- up to date?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- thoughtful and imaginative?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- well sequenced?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- appropriate to the needs of the patient?</td>
</tr>
<tr>
<td></td>
<td>VS</td>
<td>S</td>
<td>NA</td>
</tr>
<tr>
<td>---</td>
<td>----</td>
<td>---</td>
<td>----</td>
</tr>
<tr>
<td>B. EDUCATION</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 4. Beginning the Interview | Was sufficient consideration given to:  
  - gaining attention?  
  - arousing interest?  
  - providing an overview of the purpose of the interview? |
| 5. Clarity of Presentation | Realistic choice of language?  
  Clear explanations?  
  Well chosen examples?  
  Emphasis and recapitulation?  
  Usefulness of plan as a guide to action? |
| 6. Learning Activities,  
Resources/Aids | Were learning activities appropriate?  
  Were the aids effectively used?  
  Did the educator:  
  - use variety?  
  - demonstrate skill in their use?  
  Coherence of Use:  
  - introductory explanation  
  - follow up discussion |
| 7. Pacing of Interview | Varying movement, sight, sound stimuli  
  Raising or lowering the conceptual level  
  Cognizance of patients' attention spans  
  Timing of different activities within the interview  
  Clarification of instructions where necessary |
| 8. Questioning Techniques | Recognise patients' interests  
  Varying question types and sequences  
  Reinforce patients' responses  
  Foster patient initiative  
  Balance between centure and praise |
| 9. Closure of Interview | Concluding assessment of interview  
  Attention to further follow up |
C. DEVELOPMENT OF PERSONAL STYLE

<table>
<thead>
<tr>
<th>VS</th>
<th>S</th>
<th>NA</th>
<th>Questions to Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>10. Confidence in Interview</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>At ease in the interview situation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fluency, voice colour</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flexible in allowing for unforeseen circumstances?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11. Educator - client/patient rapport</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evidence of warmth, approachability or humour where appropriate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Was the patient treated as an individual?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Response to dilemmas of patients:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- by counselling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- by devising remedial activities</td>
</tr>
</tbody>
</table>

SUPERVISOR'S OVERALL SUMMARY OF THE INTERVIEW/TOPIC PRESENTATION:
(To be completed after observing the interview/topic presentation)

EDUCATOR'S COMMENTS:
In patient interactions such as counselling, group discussions, video tutorials etc., when the educator may not play a central role, an alternate interview evaluation sheet is appropriate. However, in these instances the teacher should normally:

a. set the scene for the interaction (i.e. explain the objectives);
b. meaningfully supervise patient activity;
c. if appropriate engage in remedial activity with patients; and

d. bring the interaction to an appropriate closure through discussion and review.

The educator's role as an organiser, guide and facilitator of leaning/behaviour modification would in these instances assume greater significance in the supervisor's evaluation.

The following evaluation sheet provides an opportunity to discuss the above aspects and any other issues you would like to raise.
EDUCATION/COUNSELLING/COMMUNICATION EVALUATION SHEET

Educator:_________________________ Supervisor:_________________________

Instruction Technique:_________________________ Date:____________________
GLOSSARY OF TERMS

Co-requisite: A unit which may be undertaken by a student at the same time or before a specific unit.

Credit points: A credit point is equated with two hours of student work per week in course related activities.

Pre-requisite: A unit which must be undertaken by a student before a specific unit.
DIABETES EDUCATORS' RESOURCE SURVEY
Instructions to respondents: to complete this survey you are required to answer a mix of open-ended and structured questions. The structured questions are completed by indicating the chosen response. Place either a number or a cross in the appropriate box. When you have completed the survey, please return it to me at the University of Wollongong.

<table>
<thead>
<tr>
<th>Sex</th>
<th>M ( )</th>
<th>F ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>01</td>
<td>20-29</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>30-39</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>40-49</td>
</tr>
<tr>
<td></td>
<td>04</td>
<td>50-65</td>
</tr>
</tbody>
</table>

( )( )

Postcode of Employer
( )( )( )

Do you work in:
01 Hospital 50-100 beds
02 Hospital 101-200 beds
03 Hospital 201 or more beds
04 Community setting
05 Private practice
06 Nursing home
07 Other (please specify)
( )( )

Profession:
01 Physiotherapist
02 Occupational Therapist
03 Social worker
04 Psychologist
05 Pharmacist
06 Dietitian
07 Podiatrist
08 Registered Nurse
09 Other (please specify)
( )( )

Year of first professional qualification
( )( )( )

Other professional qualifications.
(Please list all post basic/post graduate qualifications)

Period of involvement with diabetes education

______________________________
1. **Involvement in diabetes education**
   01 Followed application and interview
   02 Was congruous with professional qualification
   03 Evolved from interest in the field
   04 Just happened

2. **Did you undertake a formal course of instruction in diabetes education in preparation for your role?**
   01 Prior to appointment
   02 Subsequent to appointment
   03 No formal education

3. (a) **Do you think this instruction prepared you for your role?**
   01 Yes
   02 No
   03 Partly
   04 Not Applicable.

   ( ) ( )

   (b) If the answer to Q3 (a) is partly or no, specify areas you feel require:

   inclusion:

   greater emphasis:

4. (a) **Have you received instruction on the teaching/learning process**
   01 Yes
   02 No

   ( ) ( )

   (b) If you have answered yes, was the instruction

   Part of your diabetes education ( )
   In a general education program ( )

5. **Is your access to research literature and reference resource**
   01 Excellent
   02 Satisfactory
   03 Limited
   04 No access

   ( ) ( )
6. Is your opportunity to discuss professional issues with colleagues
   01 Readily available
   02 Satisfactory
   03 Limited
   04 No opportunity

   ( ) ( )

7. Is the level of clinical responsibility expected of you too high for your level of expertise?
   01 Often
   02 Occasionally
   03 Rarely

   ( ) ( )

8. Which of the following resources are available to facilitate your work?
   Well equipped library ( )
   Physician/endocrinologist ( )
   Dietitian ( )
   Nurse educators (lecturers in nursing programmes) ( )
   Peers with qualifications in diabetes education ( )
   Peers with extensive experience in diabetes education ( )
   Counsellors for consultation ( )
   Counsellors for client interview ( )
   Podiatrists ( )
   Ophthalmologists ( )
   Other (please specify) ____________________________________________

9. Do you conduct patient education:
   01 In groups
   02 Individually
   03 Both situations

   ( ) ( )
10. Do you devise a clear set of goals before beginning to organise a programme?
   01 Yes
   02 No
   03 Occasionally

11. Do you include the patient and his family, if appropriate, in the development of his programme?
   01 Yes
   02 Occasionally
   03 No

12. In the event that a patient does not meet your goals do you seek further information?
   01 Routinely
   02 Occasionally
   03 No

13. When making alterations to client management or making organisational decisions, do you list all alternatives prior to formulating your decision?
   01 Yes
   02 No

14. Which of the following instructional materials have you used in your patient education? (Mark your answers by X.)

<table>
<thead>
<tr>
<th>Instructional Materials</th>
<th>Not at all</th>
<th>To some extent</th>
<th>Very intensely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film and videos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working sheets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Models</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slide-tape sequence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
15. Which of the following learning activities do you include in your patient education?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not at all</th>
<th>To some extent</th>
<th>Very intensely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher lecturing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group discussion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual instruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration - practise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended readings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role play</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Do you attempt to evaluate your success in helping patients?

- 01 Often
- 02 Occasionally
- 03 No

17. Do you evaluate your patients progress?

- 01 At the conclusion of a programme
- 02 As an ongoing process
- 03 Both
- 04 Occasionally
- 05 No evaluation

18. Do you establish clear goals for patient education?

- 01 Routinely
- 02 Sometimes
- 03 No

19. Do you encourage patients to identify their own needs?

- 01 Routinely
- 02 Occasionally
- 03 No
20. Do you negotiate goals with patients?
   01 Routinely
   02 Occasionally
   03 No
   ( )( )

21. Do you contract for assessing progress toward goals?
   01 Routinely
   02 Occasionally
   03 No
   ( )( )

22. If you do assess progress do you use:
   a) standardised evaluation protocols
      Yes ( ) No ( )
   b) informal methods
      Yes ( ) No ( )

23. If you do perform these tests, is the format:
   01 Written
   02 Oral
   03 Combination
   ( )( )

24. Do you formally assess skills, for example BSL estimation, insulin technique, menu selection:
   Prior to instruction
      Yes ( ) No ( )
   After instruction
      Yes ( ) No ( )

25. Patients often discuss problems and complaints with their educators. To process patient complaints and problems do you have a:
   01 Documented written policy and procedure for complaints
   02 Systematic but not documented procedure
   03 No systematic procedure
   04 We do not receive many complaints
   05 Don't know
   ( )( )
26. Do you use a survey or other systematic means to assess consumer feedback?
01 Yes
02 Occasionally
03 No

27. Have you ever attended any inservice or staff development programmes addressing
1 Diabetes care
2 Educational techniques
3 Course design
4 Management skills
5 Communication skills
6 Counselling skills
Other (please specify) 

28. Categorise the effectiveness of the above educational experiences by entering their corresponding numbers beside the appropriate option
Highly satisfactory
Adequate
 Unsatisfactory

29. Was staff development or inservice program
01 Profession specific
02 Across professions
03 Both

30. How many hours per week would you spend on average performing
Out patient education/interview
Research
In patient education/interview
Course development/evaluation
Informal liaison with colleagues
Formal patient review meetings
31. To optimise your effectiveness as a diabetes educator/resource do you obtain literature references from:

- Computer searches (  )
- Newsletters (  )
- Journals (  )
- Manual index searches (  )
- Discussions with colleagues (  )
- Other (please specify) ____________________________

32.(a) Do you contribute to a professional body of knowledge by

- Publications in professional journals (  )
- Presentation of conference papers (  )
- Preparation of posters (  )

(b) How many professional articles have you read in the past month________________________

33. As part of your role as diabetes educator do you perceive initiating appropriate organisational change as:

- 01 Fundamental to your effectiveness
- 02 Not part of your role
- 03 Haven't considered initiating change

(  )(  )

34. How could your work with your patients be made more effective?

________________________________________________________________________
________________________________________________________________________
35. In which of the following areas would you like the opportunity for further study:

- Pathophysiology of diabetes (  )
- Counselling techniques (  )
- Communication skills (  )
- Educational techniques (  )
- Programme planning (  )
- Research methods (  )
- Diabetes management (  )
- Management skills (  )
- Other (Please specify) ________________________________

36. Briefly explain what aspects of your role you find professionally satisfying:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

37. What disadvantages are associated with your role as diabetes educator?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Please circle the day most convenient to attend a workshop at the University of Wollongong to evaluate a draft curriculum:

Mo.  Tu.  Wed.  Th.  Fr.  Sat.

Thank you for participating in this study.

Rhonda Griffiths,  
School of Health Sciences (Nursing) 
The University of Wollongong.
APPENDIX 3

DIABETIC PATIENT’S ATTITUDINAL QUESTIONNAIRE
DIABETIC PATIENTS' ATTITUDBINAL QUESTIONNAIRE
Dear Colleague,

I am a nurse enrolled in the Master of Science (Hons.) degree at The University of Wollongong. As part of the course I have chosen to conduct nursing research into the field of diabetes, and for the purposes of my thesis, I will be concentrating specifically on diabetic educators.

My experiences and readings to date indicate problems arise in diabetes education for several reasons. Health professionals are expected to become experts in this very scientific and exacting area of health care, largely by osmosis. Secondly, resources available to educators outside the metropolitan area are few, and thirdly the problems are compounded by the absence of Australian research addressed to the educational needs of diabetic educators.

Although the educational needs of diabetic patients have stimulated a considerable amount of research and evaluation, the needs of those providing these services to clients have been overlooked.

My purpose is to make contact with these health professionals and by collecting and analysing information such as professional background, available resources, both material and human, and areas of needs expressed by those working in the field to construct a profile of health professionals working as diabetes educators.

From this information will be developed an education programme targeted at health professionals already working as diabetic educators and those wishing to enter this avenue of health care.

The enclosed questionnaire includes questions which ask you to both indicate the appropriate category and provide written responses. When you have completed your questionnaire, please return the form in the envelope provided. My intention is to analyse the responses and conduct a workshop at which time I will share my findings with you, present a draft curriculum, and discuss the position of diabetic educators further.

All responses will be treated as confidential and to ensure anonymity, no signature or identification is required on the questionnaire unless you wish to do so.

Thank you for taking the time to assist me with this part of my research. Should you have any comments or questions related to my work, I will be happy to discuss these with you. I can be contacted my mail at the School of Health Sciences (Nursing), by telephone at the University on (042) 27-0767, or my private telephone number on (048) 83-4305.

I look forward to further contact with you.

Yours faithfully,

Rhonda Griffiths,
Lecturer.
Encl.
Instructions to respondents.

Information collected by this questionnaire will, in conjunction with information collected from a questionnaire being completed by diabetes educators, be used to guide the direction diabetes education in the future.

The results of these questionnaires will be used for several purposes:
   a) as indicators for future educational requirements of diabetic educators' and their patients', and
   b) as guidelines for a curriculum for diabetes educators' to be developed at the University of Wollongong.

To complete this questionnaire you are asked to read each item and indicate by a tick in the chosen box which option most closely reflects your feelings.

Confidentiality for participants will be maintained at all times. Prior to completing the questionnaire would you indicate your consent for inclusion of your questionnaire in this study by signing the consent form.

CONSENT.

I am aware of the purpose of this questionnaire, and I give my consent for the data to be used by Rhonda Griffiths, University of Wollongong, in the research project to identify educational needs of diabetes educators.

I understand that strict confidentiality will be maintained at all times.

Signature: ________________________________
Do you find your diabetes educator:

1. easy to talk to, ( ) ( ) ( ) ( ) ( )
2. answers questions to your satisfaction, ( ) ( ) ( ) ( ) ( )
3. shows you the necessary skills as often as you feel is necessary, ( ) ( ) ( ) ( ) ( )
4. encourages you to participate in establishing and reviewing your program, ( ) ( ) ( ) ( ) ( )
5. encourages you to discuss problems, ( ) ( ) ( ) ( ) ( )
6. clearly explains diabetes to you, ( ) ( ) ( ) ( ) ( )
7. ask you to list your needs, ( ) ( ) ( ) ( ) ( )
8. ask you to complete questionnaires to test your knowledge of diabetes, ( ) ( ) ( ) ( ) ( )
9. ask you to demonstrate skills e.g. testing your blood for sugar, ( ) ( ) ( ) ( ) ( )
10. appears well organised, ( ) ( ) ( ) ( ) ( )
11. Do you need to ask the same questions each time you see your educator? ( ) ( ) ( ) ( ) ( )
12. Are you encouraged to bring someone with you to appointments/programs if you wish to? ( ) ( ) ( ) ( ) ( )
<table>
<thead>
<tr>
<th>Question</th>
<th>Not at all</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Does the information you are given help you understand your diabetes?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. If you do not understand what you are taught does your educator give you the information:</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) in a different way,</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) again in the future.</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Have you been asked to evaluate your program?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Is your understanding of diabetes increasing?</td>
<td>yes ( ) no ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Has your program of instruction increased your ability to remain within the normal range for sugar in your blood?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Would you recommend your educator to other diabetics?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Are you kept fully aware of your progress?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Do you enjoy visiting your educator?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Do you feel comfortable talking to your educator?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Do you keep information from your educator?</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Do you prefer to learn:</td>
<td>( ) ( ) ( ) ( ) ( ) ( )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
individually with your educator? ( )
in a group with other diabetics? ( )
in both situations ( )

Sex: M ( ) F ( )

Postcode of clinic _____________________

Your age when diagnosed _______________

Number of years since diagnoses _________

Do you: inject insulin Y ( ) N ( )
or take tablets Y ( ) N ( )
or control by diet only Y ( ) N ( )

Have you participated in a group diabetic education program?
Y ( ) N ( )

Thank you for completing this questionnaire.

Rhonda Griffiths
University of Wollongong.
APPENDIX 4

PHYSICIANS'/ENDOCRINOLOGISTS' INTERVIEW GUIDELINES
Do you believe that virtually every diabetic patient should have the opportunity of a referral to a diabetes educator and/or a diabetes education centre?

Should most patients be encouraged to have continuing access to a diabetes educator to discuss everyday problems as they arise?

Ideally, what do you expect the diabetes educator can do that you, in the context of your practice commitments, are unable to do?

What characteristics would you nominate which distinguish the better diabetes educators apart from their colleagues?

What major factors would you consider essential to include in a formal postgraduate diabetes education programme?

Have you noticed recurrent problem areas after patients have attended an education programme?

Are there any groups of patients whom you do not specifically refer to a diabetes education centre. Why?
APPENDIX 5

EVALUATION OF DRAFT CURRICULUM
CURRICULUM DESIGN AND PROCESS

1. Name of the Course and Qualification Received:

Do you believe a qualification should be diabetes specific or broadly based? e.g. Graduate Diploma in Science (Diabetes Education) or Graduate Diploma in Patient Education. Other suggestions?

2. What type of recognition do you believe Diabetes Educators should be striving to achieve?
   a. A Post Graduate level course___________________________________________
   b. A short course with no academic recognition________________________________

   If you answer (b), what period of time do you believe would be appropriate?

3. The aims are relevant for Diabetes Educators.

   not at all                      to some extent                    satisfactory extremely relevant

4. The Objectives are achievable within the context of the curriculum.

   not at all                      to some extent                      most are highly

5. Could any aims and objectives not be achieved by satisfactory completion of the content?

6. The correspondence mode of study is appealing.

   not at all                      to some extent                      has merits highly

7. I believe this course would provide diabetes educators with necessary skills and knowledge.

   not at all                      to some extent                      satisfactory extremely well
8. Diabetes educators completing this should be capable of delivering high standards of diabetes care.

| no real difference to current courses | to some extent | satisfactory | extremely well prepared |

9. The crisis theory, high level wellness and the organismic man is an appropriate conceptual framework for diabetes education (page 3).

| not at all | to some extent | relevant | extremely appropriate |

10. The structure of the course distributes the work load evenly over the four semesters.

| not at all | to some extent | satisfactory | equally distributed |

11. Do you believe the subjects should/could be rearranged to better meet the needs of Diabetes Educators? How?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

12. The entry requirement written into this curriculum is for a diploma or equivalent with other applicants being considered on merit. Do you consider this an appropriate entry requirement?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
SUPERVISED CLINICAL EXPERIENCE

The supervised clinical experience provides opportunities for practice in the major areas of diabetes practice.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactorily</th>
<th>excellent opportunities</th>
</tr>
</thead>
</table>

The time allocated to supervised clinical experience is adequate for acquisition of basic skills.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactorily</th>
<th>highly</th>
</tr>
</thead>
</table>

The method of evaluation for supervised clinical experience will provide valuable feedback and guidance for diabetes educators?

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactorily</th>
<th>highly</th>
</tr>
</thead>
</table>

The method of evaluation for supervised clinical experience will help ensure quality service for diabetes patients?

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>relevant</th>
<th>highly valuable</th>
</tr>
</thead>
</table>

If I decided to undertake this course, I would be able to nominate a diabetes educator with skills and experiences to supervise clinical experience.

<table>
<thead>
<tr>
<th>impossible</th>
<th>with great difficulty</th>
<th>I could adjust my schedule</th>
<th>no problem</th>
</tr>
</thead>
</table>

If I decided to undertake this course, I would be able to nominate a facility offering the specified clinical experience.

<table>
<thead>
<tr>
<th>impossible</th>
<th>with great difficulty</th>
<th>I could adjust my schedule</th>
<th>no problem</th>
</tr>
</thead>
</table>
If I decided to undertake this course, I would be able to nominate a diabetes educator with qualifications in education to supervised clinical experience.

| impossible | with great difficulty | I could adjust my schedule | no problem |

How do you believe the supervised clinical experience could be made more appropriate?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
CONTENT

Pathophysiology and Management of Diabetes Mellitus

The content includes all relevant components.

| not at all | to some extent | adequate | extremely well |

What would you like to add to the content?

____________________________________________________________________

____________________________________________________________________

Is any of the content irrelevant or inappropriate?

____________________________________________________________________

____________________________________________________________________

Would you like to delete or relocate any of the content?

____________________________________________________________________

____________________________________________________________________

Do any aspects of content require modification and/or emphasis?

____________________________________________________________________

____________________________________________________________________

Is the content too extensive to be completed in one semester (14 weeks)?

____________________________________________________________________

____________________________________________________________________

Is the content beyond that required for diabetes educators?

____________________________________________________________________

Why?

____________________________________________________________________

Which aspects?

____________________________________________________________________
Are the references up-to-date and relevant?

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactory</th>
<th>extremely relevant</th>
</tr>
</thead>
</table>

Would you like to include any additional references and/or resources you find useful?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Biological Science

The content includes all relevant components.

| not at all | to some extent | adequate | extremely well |

What would you like to add to the content?

__________________________________________________________

__________________________________________________________

Is any of the content irrelevant or inappropriate?

__________________________________________________________

__________________________________________________________

Would you like to delete or relocate any of the content?

__________________________________________________________

__________________________________________________________

Do any aspects of content require modification and/or emphasis?

__________________________________________________________

__________________________________________________________

Is the content too extensive to be completed in one semester (14 weeks)?

__________________________________________________________

__________________________________________________________

Is the content beyond that required for diabetes educators?

Why?

__________________________________________________________

__________________________________________________________

Which aspects?

__________________________________________________________
Are the references up-to-date and relevant?

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactory</th>
<th>extremely relevant</th>
</tr>
</thead>
</table>

Would you like to include any additional references and/or resources you find useful?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Foundations of Teaching and Learning

The content includes all relevant components.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>adequate</th>
<th>extremely well</th>
</tr>
</thead>
</table>

What would you like to add to the content?

______________________________________________________________________________________________________________________________________________________________

Is any of the content irrelevant or inappropriate?

______________________________________________________________________________________________________________________________________________________________

Would you like to delete or relocate any of the content?

______________________________________________________________________________________________________________________________________________________________

Do any aspects of content require modification and/or emphasis?

______________________________________________________________________________________________________________________________________________________________

Is the content too extensive to be completed in one semester (14 weeks)?

______________________________________________________________________________________________________________________________________________________________

Is the content beyond that required for diabetes educators?

______________________________________________________________________________________________________________________________________________________________

Why?

______________________________________________________________________________________________________________________________________________________________

Which aspects?

______________________________________________________________________________________________________________________________________________________________
Are the references up-to-date and relevant?

| not at all | to some extent | satisfactory | extremely relevant |

Would you like to include any additional references and/or resources you find useful?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Behavioural Science

The content includes all relevant components.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>adequate</th>
<th>extremely well</th>
</tr>
</thead>
</table>

What would you like to add to the content?

__________________________________________________________________________

__________________________________________________________________________

Is any of the content irrelevant or inappropriate?

__________________________________________________________________________

__________________________________________________________________________

Would you like to delete or relocate any of the content?

__________________________________________________________________________

__________________________________________________________________________

Do any aspects of content require modification and/or emphasis?

__________________________________________________________________________

__________________________________________________________________________

Is the content too extensive to be completed in one semester (14 weeks)?

__________________________________________________________________________

__________________________________________________________________________

Is the content beyond that required for diabetes educators?

Why?

__________________________________________________________________________

__________________________________________________________________________

Which aspects?

__________________________________________________________________________
Are the references up-to-date and relevant?

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactory</th>
<th>extremely relevant</th>
</tr>
</thead>
</table>

Would you like to include any additional references and/or resources you find useful?
Curriculum Design, Lesson Planning and Teaching Techniques

The content includes all relevant components.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>adequate</th>
<th>extremely well</th>
</tr>
</thead>
</table>

What would you like to add to the content?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Is any of the content irrelevant or inappropriate?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Would you like to delete or relocate any of the content?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Do any aspects of content require modification and/or emphasis?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Is the content too extensive to be completed in one semester (14 weeks)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Is the content beyond that required for diabetes educators?

________________________________________________________________________

Why?

________________________________________________________________________
________________________________________________________________________

Which aspects?

________________________________________________________________________
Are the references up-to-date and relevant?

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactory</th>
<th>extremely relevant</th>
</tr>
</thead>
</table>

Would you like to include any additional references and/or resources you find useful?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Diabetes Educator as a Manager

The content includes all relevant components.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>adequate</th>
<th>extremely well</th>
</tr>
</thead>
</table>

What would you like to add to the content?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Is any of the content irrelevant or inappropriate?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Would you like to delete or relocate any of the content?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Do any aspects of content require modification and/or emphasis?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Is the content too extensive to be completed in one semester (14 weeks)?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Is the content beyond that required for diabetes educators?
__________________________________________________________________________
Why?
__________________________________________________________________________
__________________________________________________________________________
Which aspects?
__________________________________________________________________________
Are the references up-to-date and relevant?

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>satisfactory</th>
<th>extremely relevant</th>
</tr>
</thead>
</table>

Would you like to include any additional references and/or resources you find useful?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
Communication Theory and Practice and Counselling Techniques

The content includes all relevant components.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>adequate</th>
<th>extremely well</th>
</tr>
</thead>
</table>

What would you like to add to the content?

________________________

________________________

Is any of the content irrelevant or inappropriate?

________________________

________________________

Would you like to delete or relocate any of the content?

________________________

________________________

Do any aspects of content require modification and/or emphasis?

________________________

________________________

Is the content too extensive to be completed in one semester (14 weeks)?

________________________

________________________

Is the content beyond that required for diabetes educators?

________________________

Why?

________________________

________________________

Which aspects?

________________________

________________________
Are the references up-to-date and relevant?

| not at all | to some extent | satisfactory | extremely relevant |

Would you like to include any additional references and/or resources you find useful?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Health Education and Research Methodology

The content includes all relevant components.

<table>
<thead>
<tr>
<th>not at all</th>
<th>to some extent</th>
<th>adequate</th>
<th>extremely well</th>
</tr>
</thead>
</table>

What would you like to add to the content?

__________________________________________________________________________

__________________________________________________________________________

Is any of the content irrelevant or inappropriate?

__________________________________________________________________________

__________________________________________________________________________

Would you like to delete or relocate any of the content?

__________________________________________________________________________

__________________________________________________________________________

Do any aspects of content require modification and/or emphasis?

__________________________________________________________________________

__________________________________________________________________________

Is the content too extensive to be completed in one semester (14 weeks)?

__________________________________________________________________________

__________________________________________________________________________

Is the content beyond that required for diabetes educators?

__________________________________________________________________________

Why?

__________________________________________________________________________

Which aspects?

__________________________________________________________________________
Are the references up-to-date and relevant?

| not at all | to some extent | satisfactory | extremely relevant |

Would you like to include any additional references and/or resources you find useful?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
GRADUATE DIPLOMA IN SCIENCE

(DIABETES EDUCATION)

CURRICULUM EVALUATION

After you have read the draft curriculum and discussed the design, content and process with colleagues, I would like you to complete the evaluation forms. The forms comprise a mix of structured and open ended questions. When answering the structured questions, circle the option that most closely correlates with your opinion. Your responses to the open ended questions do not have to be confined to the space provided. Any comments, suggestions and guidance you would like to offer will be appreciated.

Comments written on the draft curriculum document will also be valuable sources of feedback and will be included in the evaluation.

To enable me to prepare the results of this evaluation for the workshop, would you please return the evaluation forms and the draft curriculum to me by _________regardless of your intention to attend the workshop. If you will not be attending the workshop it is essential for the evaluations to be returned to allow you the opportunity to contribute to the curriculum.

I thank you for taking the time to review the draft curriculum and complete the evaluation form.


Rhonda Griffiths.