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An examination of the characteristics of young, potentially gifted children from culturally diverse backgrounds as the basis for the development of appropriate educational programs

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AN EXAMINATION OF THE CHARACTERISTICS OF YOUNG, POTENTIALLY GIFTED CHILDREN FROM CULTURALLY DIVERSE BACKGROUNDS, AS THE BASIS FOR THE DEVELOPMENT OF APPROPRIATE EDUCATIONAL PROGRAMS

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

DOCTOR OF EDUCATION

from

UNIVERSITY OF WOLLONGONG

by

YVONNE EMILY CARNELLOR
MEd., BEd. (Deakin)

FACULTY OF EDUCATION
1996

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Teach children what to think and limit them to your ideas. Teach children how to think and their ideas are unlimited.

(Thinking Works, 1994-95).

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ABSTRACT

Despite agreement among scholars and researchers that identification of gifted children should be based on multiple criteria, current research continues to indicate a heavy reliance on an IQ score (Alvino, McDonnel & Richert, 1981; Frasier, 1987). This practice often prevents economically disadvantaged, culturally diverse, bilingual, or minority students from taking part in a gifted program.

Significant numbers of these students do not meet traditional criteria for gifted programs, but possess cognitive, motivational, artistic or creative potentials that clearly enable them to participate in the types of programmed experiences designed to develop and nurture academic and creative behaviours. Gallagher (1988) noted that vigorous efforts to establish programs to search out high intellectual ability in underserved and unserved subgroups (for example, underachieving gifted, culturally diverse gifted, gifted handicapped, gifted females) is a major priority in the field of education.

The purposes of this study were:

1) to investigate the characteristics of gifted NESB, Aboriginal and economically disadvantaged students,

2) to use these characteristics to investigate new procedures for their identification, and

3) to develop an appropriate differentiated Early Childhood Intervention Program that will meet the specific needs of these students.

This qualitative research study, using multiple case study design, investigated the characteristics of academic giftedness displayed by 52 children, aged 5-6 years, from culturally diverse and/or economically disadvantaged backgrounds. A researcher-designed instrument, IPMAI, was used to develop comprehensive intellectual profiles of each child. These were then used as the basis for the development of a proposed gifted program at three school sites in the Illawarra region of New South Wales.

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CHAPTER 1

INTRODUCTION

PURPOSE OF THE INQUIRY

As a result of the Carrick Review (1989), the New South Wales (hereafter termed NSW) Government released their Strategy for the Education of Gifted and Talented Students in 1990, expounding that "the aim of education is to assist in the development of each child's potential" and the "provision for helping children of exceptional ability is not a luxury but a necessity" (p2).

During the last seven years, special programs for the gifted and talented students, ranging from full-time schools (as with the NSW Selective High Schools), and full time classes at Year 5 and 6 (NSW O.C. classes), as well as a multitude of pull-out alternatives that may vary from one day or several hours per week, or per month, to a one-off experience, have been implemented throughout most school districts. Where these programs were developed to focus on advanced cognitive skills, the overriding criterion for inclusion in the program was the result of an Intelligence test, a score that was usually in excess of 130.

However, with the development of research over the past twenty years, the concept of intelligence has taken on new dimensions. No longer is it necessary to rely on a very narrow single-track idea of intelligence - that of a high IQ Score - because the tools to determine the full scope of every individual are available if multiple procedures are implemented. Psychologists such as Vygotsky (1978) and Gardner (1983) propose that intelligence tests fail to yield any indication of a child's zone of potential development, and studies of intelligence and cognition have suggested the existence of a number of different intellectual strengths, or competencies, each of which may have its own development history. One of the main barriers to empowering every child to reach his/her full potential

is teacher attitude (Carroll, 1982; Feldman, 1991; Gross, 1986; Renzulli, 1979; Resnick, 1976; Sternberg & Salter, 1982). Teachers, school counsellors, associate all concepts of intelligence with high level thought patterns; informed decision making; ability to think laterally; the ability to use one's brain power - the resulting measure of an IQ Test. As a result of these persisting attitudes, many students have been severely disadvantaged over the years.

Tests are encased in language and, quite often a very high level of sophisticated English, thus children from a restricted English background (hereafter termed NESB), Aboriginal children and even those from a low socio-economic background (hereafter termed low SES) are at a distinct disadvantage when attempting these tests. As a result of the children's apparent low scores, educational misplacements are frequently made. This barrier will only be broken down when the identification of children, both gifted and those with learning problems, is administered at a very early age using a multiplicity of instruments. Appropriate and effective programs must then be implemented that will assist the children to attain their full potential. For far too many years, poverty, ethnicity or Aboriginality have all been equated with a learning deficit, when really what should be realised is that different cultures and social groups have different sets of values, not a deficit set of values.

Davis (1948) was among the first to draw attention to the cultural bias, including social class and race, that is inherent in IQ tests. More recent research (Baldwin, 1977, 1984; Black, 1963; Frasier, 1991; Hoffman, 1964; Passow, 1979; Richert, 1982, 1985) has focussed on the importance of cultural differences in intelligence and the failure of IQ tests to identify an adequate proportion of children from outside the middle-class stream for gifted programs. Sternberg (1986) proposed that a greater emphasis had been placed on the role of knowledge and the interaction between this knowledge and mental processes and stressed that there was considerable emphasis of context and culture in defining

intelligence. Many educators are concerned that children from certain races and lower socio-economic groups continue to be under represented in programs for gifted students.

The notion that intelligence is fixed is closely related to the issue of heredity. If it is believed that intelligence is wholly innate, then it is also believed that intelligence is fixed and it is not possible to teach children to become 'smarter'. Fortunately there is an abundance of evidence that these conclusions are incorrect. Programs that indicate the inadequacy of these notions include *Headstart, Catalyst (BOHST) Programs (1990) and Mary Meeker's (1963) SOI Techniques for Teaching Competency* which have all had significant effects on the intellectual development of "deprived" children in the United States of America.

There are many gifted children from economically-deprived backgrounds. Educators have to develop better ways of identifying them. Many teachers still retain prejudices about poor children, NESB children and Aboriginal children that result in low expectations for such children. Therefore, concerned educators need to instigate the use of alternative and reliable methods of identification that will not exclude these children from special programs.

Early identification of gifted students is imperative, and for the middle-class Anglo children accurate identification, is relatively easy. Alternatively, those children who come from homes where English is not used, and early childhood enriching experiences have only been provided from television programs, justification for using the same criteria — for example, "has a large, enriched vocabulary", "is highly inquisitive, imaginative and intellectually curious", "has mastery of foundation reading skills" — to make accurate identification are not valid.

The purposes of this study are:

1) to investigate the characteristics of gifted Non English Speaking Background, Aboriginal, and economically disadvantaged students;

2) to use these characteristics to investigate new procedures for the identification of these students; and,

3) to develop an appropriate differentiated Early Childhood English as a Second Language (hereafter termed ESL) / Language Program to meet the needs of these students.

RATIONALE AND THEORETICAL FRAMEWORK

The focus of this study was to establish a means of early identification of young gifted children from minority group backgrounds, namely NESB, Aboriginal and low SES. Gifted youngsters from these groups do not enter school displaying the commonly accepted attributes of giftedness: early reading ability; large fluent English vocabulary; broad general knowledge and relevant educational experiences (Baldwin, 1977; Clark, 1983; Kranz, 1981; Renzulli, 1983). Accurate identification becomes a very difficult task when these characteristics are not readily displayed and unfortunately many of these gifted minority group children are undetected throughout their vital school years.

To ensure that this practice is not continued in schools and to assure that all children are educated to their full potential, which may include access to special programs, classes or schools, it was necessary within this research study to approach the problem initially using a four phase methodology to establish a construct of giftedness.

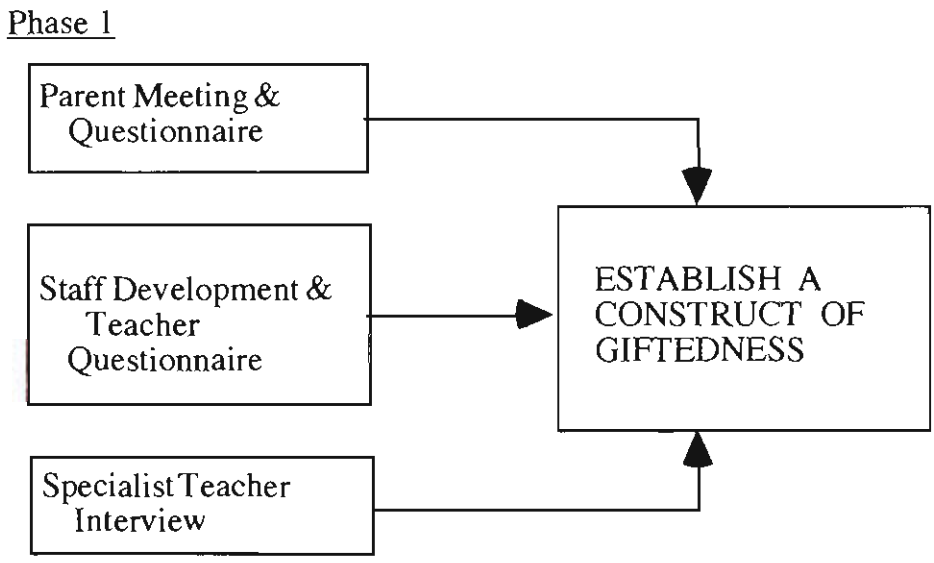


Figure 1.1. Establishing a construct of giftedness.

To establish the parents' concepts and knowledge of giftedness, parents of Kindergarten and Year 1 students from each of the three schools (coded as A, B and C in this study) attended separate information sessions, of approximately one hour. At each of these sessions the overall plan of the research study was outlined. Where necessary these sessions were attended by Ethnic Aides / Interpreters, who were able to clarify any questions as they arose. These sessions also enabled a good rapport to develop between the researcher and parent groups before beginning the study. This friendly interaction was strengthened throughout the project. At the conclusion of each session, Questionnaires, comprising three open-ended questions, were distributed, one per family. These were also available in home languages where desired (see Appendix 1).

Staff Questionnaires (see Appendix 3) were completed at Staff Development sessions held at each school. This ensured a full staff input and established a whole-school commitment to the project.

Responses from Specialist Teachers (School Counsellors, Teachers on withdrawal classes for older gifted children: Years 5 and 6; Secondary School classes; Saturday Schools) were obtained using both questionnaires and interviews.

Phase 2

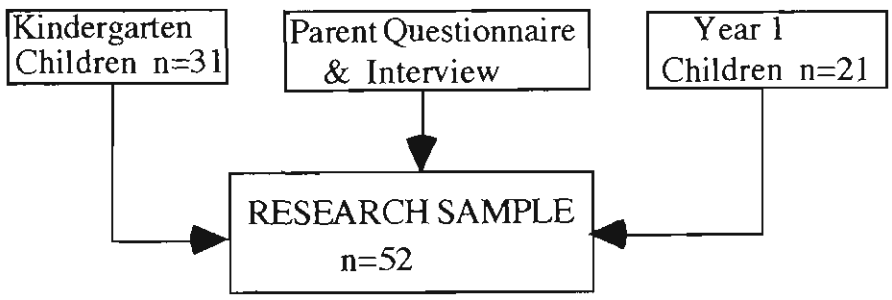


Figure 1.2. Selection procedure for research sample.

The number of children in the research sample was approximately equal from each school (A=19; B=17; C=16) and the number of Kindergarten to Year 1 in the ratio of 3:2. The

Kindergarten children were selected randomly with the option given to teachers to add any other child they felt was demonstrating gifted behaviours.

Phase 3

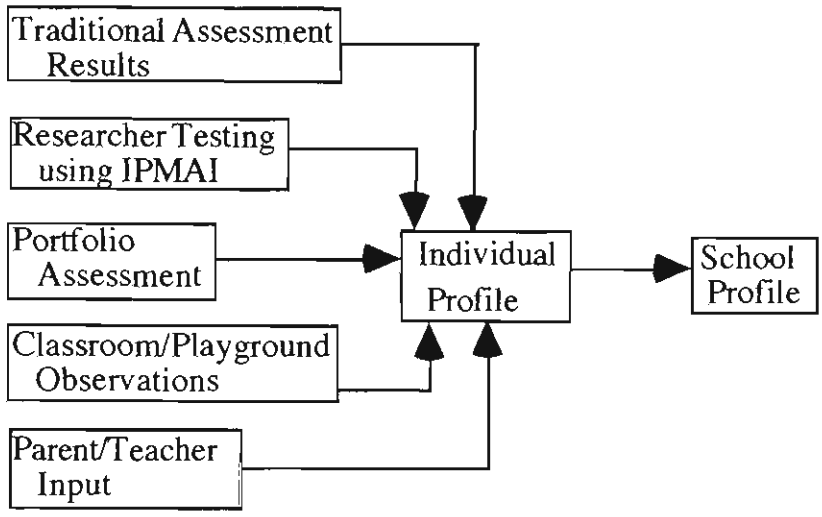


Figure 1.3. Assessment procedures needed to develop a school profile.

During this phase many sources of data (as shown in Figure 3) were utilised to develop an in-depth profile for each child in the sample, and subsequently a more general school profile.

Parents of the children selected were asked to complete a second questionnaire which consisted of thirty statements pertaining to giftedness and requiring a yes/no response (see Appendix 2). Parents were also interviewed briefly. This provided important home background knowledge about each child (see Appendix 3).

Anecdotal records of continual informal discussions with all class teachers involved, formed an essential aspect of this phase, as did researcher observations made within classroom and playground situations.

Phase 4

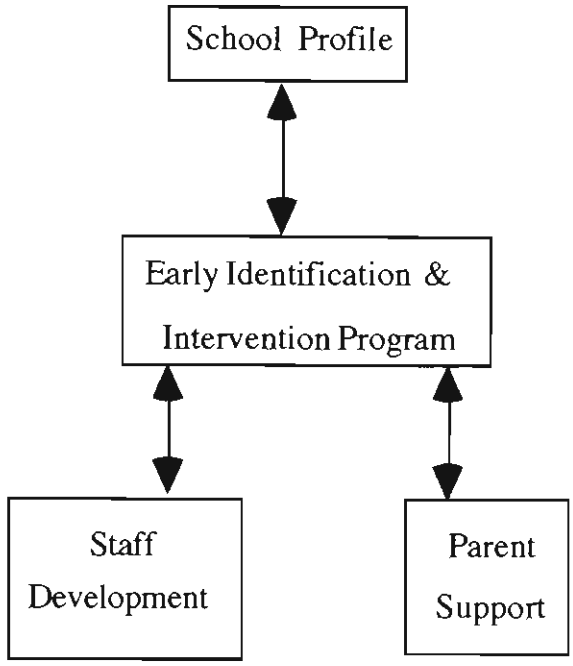


Figure 1.4. Whole school professional development plan.

Phase 4 was the culmination of the study. All children's profiles were discussed with teachers and parents and the school profile was reported back to each school staff. This would enable each school to implement its own effective whole school intervention program (as documented in Chapter 5), that would enable early identification of these gifted children from minority groups, while developing teachers' knowledge of giftedness and classroom strategies that facilitate the full potential learning capacities of children in their care. Support groups for parents was also an issue deemed to be essential if an intervention program was to be truly successful.

The data gained from these sources allowed the researcher to develop future planning which for parents and staff would be an integral part of the research. For gifted young children from any group, but in particular from these minority groups, identification alone is not enough. Once identified they will continue to foster and expand their learning potential.

It was therefore essential that teachers (and parents) become equipped to identify giftedness in these children using a variety of techniques. This was achieved through planned Staff Development Sessions where teachers were presented with the Baldwin Identification Matrix (1984), Gardner's Theory of Multiple Intelligences (1983), classroom strategies for curriculum differentiation and portfolio assessment; classroom observations by researcher and later discussed with teacher; and in-depth discussion of profiles of the children.

Despite agreement among scholars and researchers that identification of gifted children should be based on multiple criteria, current practices continue to indicate a heavy reliance on an IQ score (Alvino, McDonnel & Richert, 1981; Frasier, 1987). This practice often prevents disadvantaged, culturally different, bilingual or minority students from taking part in a gifted program (Reis, 1989). Significant numbers of students do not meet traditional selection criteria for gifted programs, but possess cognitive, motivational, artistic or creative potential that clearly enable them to participate in the types of experiences designed to develop and nurture academic and creative behaviours. Gallagher (1988) noted that vigorous efforts to establish programs to identify high intellectual ability in underserved and unserved subgroups (eg underachieving gifted; culturally different gifted; gifted handicapped; gifted women) are a major priority in the field of gifted education. Therefore, there is an urgent need for educators to analyse the methods used for identification of gifted and talented children for these specialised programs.

SAMPLING CONSIDERATIONS

An investigation of high ability NESB, Aboriginal and low SES students allowed the examination of the impact of existing theories about identification systems to discover and develop giftedness within these populations. The problem addressed in this study was the lack of effective systems of identification of gifted and talented students who may or may not be identified through traditional assessment methods. This study addressed this priority by proposing to use case studies to describe gifted disadvantaged students. Since no clear profiles exist of gifted children in these groups, the development of appropriate

identification procedures to date has been severely hampered. This project was designed to construct a more comprehensive picture of gifted NESB, Aboriginal and low SES students in order to develop more appropriate identification procedures.

Purposeful sampling was used to select individuals from the target population for case studies. In order to identify these students, a preliminary population of approximately 250 students from Infants grades, between the ages of 5 and 7 years was targetted. This sample was balanced by gender, and included students in bilingual and mono-lingual settings in schools within the South Coast Region of NSW, including both the Public and Independent Sectors.

RESEARCH QUESTIONS

The following questions guided this research.

1. What are the perceptions of ability held by NESB, Aboriginal, low SES students and their parents?

1. 1 How do the various cultures, namely Macedonian, Arabic (Lebanese), Turkish, Vietnamese, Portuguese, Spanish, Italian, Maltese and Aboriginal construct their concept of giftedness, particularly in Early Childhood children?

1. 2 How is the concept of giftedness within these cultures different from the generally accepted school concept?

2. What are significant behavioural and performance indicators of early childhood intellectual potential?

2. 1 What significant characteristics are nominated by parents as indicating potential giftedness in children?

2. 2 What significant characteristics do teachers and specialist teachers nominate as indicating potential giftedness in children during early childhood years?

3. What is the nature of the home environment of these potentially gifted students?

3. 1 What home activities does the child enjoy?

3. 2 What activities within the home are conducive to the development of giftedness?

3. 3 What assistance is given to the child by older siblings?

3. 4 How well does the child interact with other family members, friends and other adults?

3. 5 Is there any sibling resentment of the potentially gifted child?

4. Are values or other personal conflicts (such as competition or achieving at the expense of others) between the school culture and the home culture affecting the identification of gifted NESB, Aboriginal or Low SES children in early childhood years?

5. Are teachers' perceptions of gifted students affecting nominations of students into gifted programs?

5. 1 Do teachers see a need for special programs for gifted children?

5. 2 How do teachers make instructional decisions for potentially gifted children in their classes?

5. 3 To what extent is Portfolio Assessment used and valued?

6. What conclusions can be drawn from the test outcomes of the subjects, and what are the implications for developing a new paradigm or theoretical perspective for the identification of giftedness in this population?

7. Is the IPMAI (Identification Profile Matrix for Academic Intelligence, Carnellor, 1995) a reliable and efficient instrument for the identification of young NESB, Aboriginal or Low SES students? (see Appendix 5).

DEFINITION OF TERMS

The terms used in this research are defined as follows:

Gifted and Talented: refers to students demonstrating intelligences surpassing those of their class/group peers.

Intelligence: "An intelligence is the ability to solve problems, or to create products, that are valued within one or more cultural settings" (Gardner,1983: p.x).

Gifted Programs: are full-time or part-time classes or schools for instruction of children who have been identified as Gifted and Talented in one or more domains including:

OC Classes: which are full-time instruction for children in Years 5 and 6 designated as academically gifted.

Selective High Schools: which are full-time instruction for children in Years 7 - 12 designated as academically gifted.

Withdrawal Programs: for part-time instruction which may vary from single lessons to full-day sessions and cater for children displaying one or more intelligences.

IPMAI : Individual Profile Matrix for Academic Intelligence - a battery of tests used by the researcher, in a one-on-one situation. These tests are a combination of non-traditional and standardised assessment mechanisms.

Multicultural:: inclusion of aspects of the representative ethnic and cultural groups, their languages, customs and traditions.

Specialist Teachers:: are those teachers whose full-time or part-time position involves the instruction of gifted children on a withdrawal basis. It also includes teachers from the Illawarra Ethnic Teachers' Association and School Counsellors.

LIMITATIONS OF STUDY

Although the children, in the age range of 5 - 6 years, (K/Y1), were representative of NESB, Aboriginal and Low SES backgrounds, the conclusions of the study cannot be generalised to all areas as the sample for this research was only chosen from schools in the South Coast Region of NSW. However, there are implications to a larger audience as the NESB children were representative of Macedonian, Arabic (Lebanese), Turkish, Maltese, Portuguese, Italian and Spanish groups.

Due to the one-on-one nature of gathering the majority of research data (testing), which took in excess of four hours per child, the sample size had to be limited to 52 children. At this point in time, the assessment procedure, used to gain the relevant child ability data has not been standardised and must be classified as a non-traditional assessment mechanism. However, these subtests were supplemented by standardised assessment: Peabody Picture Vocabulary Tests (Revised); Draw-a-Man (Goodenough & Harris, 1963).

SUMMARY

This research examined the possibility of identifying young gifted children from minority groups using largely non-traditional methods adopted for determining giftedness. Two traditional tests: "Draw a Man" and "Peabody Picture Vocabulary" (Revised Edition) were also used to triangulate data, with researcher and teacher assumptions of children's observational skills and English language proficiency.

Comprehensive profiles were compiled on each child, which were then used to formulate a general school profile. From these school profiles, an Early Intervention Program was developed and presented to combined staff and parent meetings at each site. Once accepted it would become a crucial part of the future Total School Development Plan for each school.

CHAPTER 2

REVIEW OF RELATED LITERATURE

INTRODUCTION

The identification of gifted children is twofold in its aims, both of which must be addressed if special provisions for these children are to be successful. Firstly, accurate identification of children whose ability deviates from the norm, and therefore cannot be satisfied educationally by the regular classroom program, must be made. However, it is also essential that further identification of specific areas of strengths and weaknesses of these children must follow in order to determine the special curricular provisions that will be necessary for these children to reach their full potential.

The education of gifted children is becoming a greater focus of concern among current researchers, educators and parents. There is an ever-increasing awareness that these children have special needs which are not being adequately or appropriately met in the regular classrooms by practitioners who have had little or no training in the area of gifted education (Whitton, 1995). The proportion of gifted students who remain unidentified is unknown, but current evidence (Baldwin, 1994; Braggett, 1985; Jenkins-Friedman, Richert & Feldhusen, 1991; Maker, 1993; Renzulli et al, 1976; Rimm, 1986) suggests that it is probably considerable, particularly from poor, culturally diverse, or Aboriginal families, where environmental factors have their greatest impact on the scholastic performance of the brightest children. Additional techniques of identification are essential if we are to 'sift out' these gifted students. Excluding the exceptionally gifted child whose abilities will be very quickly recognised, usually at a very early age, this identification procedure is a very complex task requiring multiple assessments for accuracy (Baldwin, 1984; Frasier, 1987; Gibson, 1992; Hanson, 1993; Harris, 1991; Harslett, 1993; Richert, 1985; Schlesinger, 1987). The most widely used mechanism, over many decades, has been the IQ Score, the result of either a group or individual test, or some form of

standardised tests. However, because of the nature of these tests, and the level of English Language development that they require to successfully achieve, children from diverse cultural backgrounds or minority groups, have been severely disadvantaged. Frasier reinforces the shortcomings in these identification processes in stating that she is:

> ... not arguing against or for the traditional identification procedure.... we know that there is something else that it can do....Traditional measures have not done as good a job in finding children who do not perform well on some components that are included in the test (Frasier, 1991, p. 2).

These traditional identification procedures have resulted in the under-representation of minority groups in special programs for gifted children, and as Passow maintains,

> Talent is not the prerogative of any racial or ethnic group, any social class or any residential area. It may be untapped in some situations, under some conditions, but no population has either a monopoly or absence of talent (Passow, 1972, p. 31).

The reality is that throughout the world, minority culture children are underrepresented in programs for the gifted (Bernal, 1981; Cox & Daniel, 1983). Australia is no exception (Braggett, 1985; Senate Select Committee on Education for Gifted and Talented Children, 1988).

Inaccurate identification and assessment of exceptional potential in young children from minority and/or economically disadvantaged settings has always been a source of difficulties in the selection of gifted youngsters for special program placement (Hartley, 1989; Olague, 1993; Shaklee, 1992). Problems in identifying gifted students with cultural differences, language disadvantages and limited vocabulary development of minority children, are now being cited as factors involved in the failure of these children.

> For individuals with standard middle-class backgrounds, assessing intellectual skills by items that draw heavily upon knowledge may be quite reasonable. But for individuals with non-standard backgrounds, heavy demands upon the knowledge base may result in "misses" in identification that could otherwise be prevented. Because there already exists many measures of various kinds of intellectual skills that are appropriate for those from standard middle-class backgrounds we think it particularly important to

> develop instruments that can spot exceptional talent in those from non-standard backgrounds (Sternberg, 1985, p. 289-90).

DEFINITION OF INTELLIGENCE

What do we understand as "intelligence"? How does it grow, develop and change - or does it? Is it inherited as a complete entity or is it modified over time - and if so what unusual opportunities or favourable conditions must be present to bring about change? These are questions that have been debated continuously over time by educational psychologists and theorists. The outcomes often determine curriculum development and classroom practices which may not be challenging all students to attain their full educational potential.

Historically, some concept of intelligence can be traced back to the ancient Greeks and possibly further. About the 6th Century B. C. Homer recognised intelligence as an entity and distinguished it from other skills. In his famous Odyssey, Ulysses chastises Euryalus:

> You are an insolent fellow - so true is it that Gods do not grace all men alike in speech, person and understanding. One man may be of weak presence, but heaven has adorned this with such good conversation that he charms everyone who sees him; his honeyed moderation carries his hearers with him so that he is leader in all assemblies of his fellows, and wherever he goes he is looked up to (cited by Sternberg, 1990, p. 23).

Socrates in the 4th Century B. C. further stated that part of human intelligence was the love of learning and knowledge; truthfulness and the unwillingness to accept falsehoods; and, indeed, the love of truth.

Today most educators agree that true learning - learning that is useful and permanent, that leads to further learning - must be the product of experience, interests and concerns to the learner. Children, without exception, have an innate and unquenchable drive to understand the world in which they live and to gain independence and competence in it, and all things that add to their power of understanding, their mental and physical growth, their pleasure,

their dignity and worth are part of their true education (Holt, 1964). Education is something that people get for themselves - not something that someone else gives or does for them. They utilise their own intelligence to achieve their goals. Lefrancois proposes that:

> Intelligence has been classified over the years under many categories: mental maturity, general classification, scholastic aptitude, mental ability, primary mental abilities etc. , all of these having similar connotations but with differences of emphasis or application. In fact, the term intelligence must rate as the second most frequently used - but least understood - term in education. It is only superseded by creativity (Lefrancois, 1972, p. 232).

Educational psychologists expound a variety of controversial beliefs about intelligence and find it difficult to determine an agreement to the simple question, How can you tell whether or not someone is intelligent? Cohn (1983a), Stanley (1988), Stanley & Benbow (1986) and Van Tassel-Baska (1984) agree that intelligent children should do well on school achievement tests, while politicians, educational administrators and school counsellors insist that intelligence tests would give the most accurate assessment, and despite imperfections and limitations, a test of general ability is the best single indicator of any given child's potential in educational development. They have also stated that these tests act as a powerful diagnostic tool when used skilfully, accurately and along with other assessments. The U.S. Office of Education (1972) has stated that:

> Gifted and talented children are those identified by professionally qualified persons, who by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by 'regular school programs' in order to realise their contributions to self and society (p. xxv).

If intelligence were to be discarded as a redundant concept, what then would replace it? Although research workers have found that IQ is a useful measure against which other aspects of behaviour and performance may be compared, for practising teachers the crucial issue is not the possible existence, present or future, of the concept of intelligence, but rather how this intelligence may be developed and utilised by each individual. According to Lefrancois:

> Behavioural scientists began to realise rather late that intelligence cannot be defined independently of the criteria that reflect social value priorities (Husen, 1975, p.2-3). When intelligence is assessed, therefore, observations and measurement against the background of a given socio-cultural pattern cannot be avoided. Because IQ tests measure relatively limited kinds of abilities, they seldom draw upon interpersonal skills, athletic ability, creativity or any other desirable human traits (Lefrancois, 1972, p. 235 - 6).

Gardner (1985) describes the IQ Movement as blindly empirical, and based on tests with some predictive power about success in school but only marginally on how the mind works, and continues:

> No view of any required processes or even how one implements problem solving strategies is defined. Its narrow focus is the ability to arrive at the correct answer. These tests are decidedly microscopic and often unrelated to the present classroom situation. The tasks are remote and rely heavily on language, and thus reflect the child's skill in defining words, knowing facts about the world and endeavouring to make connections among verbal concepts. These tests rarely assess any skills in assimilating new information and reveal very little knowledge about an individual's potential for further growth (Gardner, 1985, p. 18).

During this century, there has been a marked shift in the definition of intelligence and the methods and instruments for measuring that should be applied in the educational setting. The early studies of the concept of intelligence were almost always equated with the IQ score attained (Binet, 1916; Goddard, 1928; Skinner, 1946). As early as 1938, Thurstone had distinguished what he described as the seven Primary Mental Abilities. Then in 1967, Guilford hypothesised one hundred and fifty separate abilities in his Structure of the Intellect Theory. However, recent neurological research (Gardner, 1983; Sternberg, 1985) and theories of intelligence have refocused thinking towards a pluralistic, multifaceted nature. Fodor (1983) suggested that the mind is composed of a number of distinct modules, and in 1985, Sternberg proposed the Triarchic Theory of Intelligence. Gardner's theory of Multiple Intelligences (1983) and Ceci's Bioecological Theory (1991) have all supported the pluralistic notion of intelligence - hopefully refocussing the thinking and practice of psychologists and practitioners.

Sternberg's Triarchic Theory (1985) defined intelligence as a composition of three equally important kinds: componential or analytical, experiential or creative, and contextual or practical intelligences. Componential intelligence does fit the conventional idea of intelligence and he maintains that a person scoring well on componential tests will also do well on school intelligence tests. Sternberg further equates componential intelligence with learning strategies: paying attention to relevant information while eliminating irrelevant, and connecting new information to information previously stored in the memory. Sternberg defines experiential intelligence "as the ability to have insight, to see the big picture, to see old problems in new ways, and to apply old solutions to new problems" (cited by Jolly & Mitchell, 1996, p.209), and describes it as more valuable than componential intelligence. Sternberg's third kind of intelligence is defined as contextual, practical or real-world intelligence.

Gardner (1983) proposed his theory of Multiple Intelligences where he defined at least seven kinds of intelligence. He felt that society, and in particular schools, were placing emphasis only on logical-mathematical and linguistic intelligences, while his other five, spatial, musical, bodily-kinaesthetic, interpersonal and intrapersonal were equally important to the full development of the individual and to society at large. Like Sternberg, Gardner also attacked the use of standard intelligence tests to identify and label "gifted children".

DEVELOPMENT OF THE CONCEPT OF GIFTEDNESS

Because of the shift in the concept of intelligence, the response to the question, What is Giftedness? must further lead us to the differentiation of investigative focus and towards identification of specific talents rather than accepting the one-off IQ score or standardised test results as the only indicators of giftedness. Freehill stressed that:

> Literature on the development of intellectual gifts includes numerous horror stories - stories of gifts not found, talents not nurtured and ideas lost. There must also be a legion of untold cases - stories of abilities never aroused or never manifest (Freehill, 1982, p. 1).

The term gifted has been greatly expanded since early researchers like Terman began their studies. Definitions have continually stressed skills and talents other than academic ability and IQ and have emphasised areas such as creative thinking and problem solving (Cohn, 1981; Gagné, 1985; Renzulli, 1984, 1986, 1987; Treffinger & Renzulli, 1986). Many gifted children may not possess all of these characteristics and often act in such a way as to conceal these traits, especially as they progress through the school grades. However, if the school allows or encourages individuals to exhibit their natural skills, certain characteristics on which learning can be activated, will become evident. This was reinforced by Hoyle and Polikarov when they proposed:

> The problem of securing optimal education for gifted students is a crucial one for the growing generation, and hence for the creation of a better world of the future, a problem which no nation can afford to meet with indifference. This is a question which concerns parents and teachers, psychologists and doctors, sociologists and public figures alike. The field of gifted child education is gaining a high relevance, as all its vital implications come to light. To quote the noted contemporary astrophysicist Hoyle: "The nation that neglects creative thought today will assuredly have its nose ground in the dust tomorrow." It is possible to acquire a correct perspective and judgement on this matter only on the basis of a comprehensive appraisal of the present state of social development, particularly of the mounting significance of human resources (Polikarov, 1979, p. 7).

This idealistic phenomenon, however, could possibly be very difficult to put into everyday educational practice if the prevailing attitudes towards the education of culturally different children is allowed to permeate the whole system. To ensure a future that is dynamic, we must bury old prejudices and ignorance, and initiate the realisation of the human and social ideal, constantly quoted in educational curricula and policy documents, that we will guarantee each child the right and opportunity to develop his/her optimal potential.

No absolute definition of 'giftedness' exists. The literature has alluded to the idea of giftedness being a quantitative figure, gained from a single IQ test or a group of standardised tests.

Among the first to recognise the special educational needs of gifted students was Harris (1868) who established flexible promotion for able students in the St Louis schools. The

various programs offered were "to meet the needs of the pupils of more than average capability, brilliant children, pupils of super-normal mentality, gifted and a variety of other terms" (in Passow, 1980, p. 2). Similar 'rapid advancement classes' were established for the exceptionally bright children in New York City in 1900.

Terman's studies during the 1920s were aimed at not only increasing the knowledge of mental and physical characteristics of gifted children but how these characteristics should be used to increase educability through more appropriate classroom programs and strategies, as stated in:

> Where the sources of our intellectual talent have been determined, it is conceivable that means may be found which would increase the supply. When the physical, mental and character traits of gifted children are better understood it will be possible to set about their education with better hope of success.... In the gifted child, nature has moved far back the usual limits of educability, but the realms thus thrown open to the educator are still terra incognito. It is time to move forward, explore and consolidate (Terman, 1925, p. 16-17).

Cox, who was one of Terman's co-workers, examined the biographical and historical records of eminent people to estimate IQs as accurately as possible and concluded that "youths who achieve eminence in later life are characterised not only by high intellectual traits, but also by persistence of motive and effort, confidence in their abilities and great strength of force of character" (in Passow, 1980, p. 6).

While Terman was conducting his studies in California, Hollingworth was very much involved in her studies of the gifted in New York. Like Terman and Cox, she defined gifted children thus:

> By a gifted child, we mean one who is far more educable than the generality of children are. This greater educability may be along the lines of one of the arts, as in music or drawing; it may lie in the sphere of mechanical aptitude, or it may consist in surpassing power to achieve literacy and abstract intelligence. It is the business of education to consider all forms of giftedness in pupils in reference to how unusual individuals may be trained for their own welfare and that of society at large (in Pritchard, 1951, p. 49).

As early as 1953 Scheifele proposed that "creativity or originality were the distinguishing characteristics of the work and behaviours of the truly gifted child" (p. 2). Like Woodcock (1961), he differentiated the concept of giftedness in his studies. He referred to two kinds of giftedness: "firstly intellectual giftedness of a high general nature as determined by individual psychological testing, the minimum intelligence quotient recognised being that of 130, and secondly talent giftedness of a high specific nature in art, music, etc, determined by try out or performance" (p.16).

This was followed by the research findings of Durr (1964), who maintained that gifted may be defined in intelligence or achievement, and although displayed as an intelligence score, "there is little agreement on the particular score that divides the gifted from the average. The IQ cutting score has been given as 120, 150 and practically all numbers in between" (p. 14).

Witty (1958) encouraged educators to broaden their definitions of giftedness so that it would include any child whose performance was consistently outstanding, while the work of Guilford (1977), Taylor (1964), Torrance (1973), and other prominent educators included 'creativity' in their definitions. This was later supported by Gallagher and Weiss when they contended that:

> There have been numerous attempts to sort out the special characteristics of the creative child - that child who possesses superior ability to generate, visualise, dramatise or illustrate a new idea, concept or product. While there is a close relationship between high mental ability and creativity, it has become clear that there are particular intellectual skills and personality traits that predispose certain children and adults to creative activity (Gallagher & Weiss, 1979, in Passow, 1980, p. 7).

Although it is agreed that there is no single statement that can adequately conceptualise giftedness, the definition proposed by Renzulli (see figure 2.1) was for many years accepted by New South Wales Department of School Education, (hereafter NSW DSE) and formed the basis of policy statements and strategic plans for educating gifted children:

> Giftedness consists of an interaction among three basic clusters of human traits - these clusters being above-average general abilities, high levels of task commitment, and high levels of creativity.... Children who manifest or are capable of developing an interaction

> among the three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs (Renzulli, 1978, p. 184).

Figure 2.1. Graphic representation of the definition of giftedness according to Renzulli (1979).

Tannenbaum (1983) reinforced this notion that one of the distinguishing characteristics of

giftedness was that the student is a producer, not just a consumer of information and culture, and offers as a definition:

> Keeping in mind that developed talent exists only in adults, a proposed definition of giftedness in children is that it denotes their potential for becoming critically acclaimed performers or exemplary producers of ideas in spheres of activity that enhance the moral, physical, emotional, social, intellectual or aesthetic life of humanity (Tannenbaum, 1983, p. 86).

He concluded that children have to be compared with others of their age for early signs of giftedness that should be nurtured in order to result in adult giftedness. Like Renzulli, Sternberg and Gardner, he viewed intelligence as a combination of attributes to produce the quality of 'giftedness' as shown in Figure 2.2.

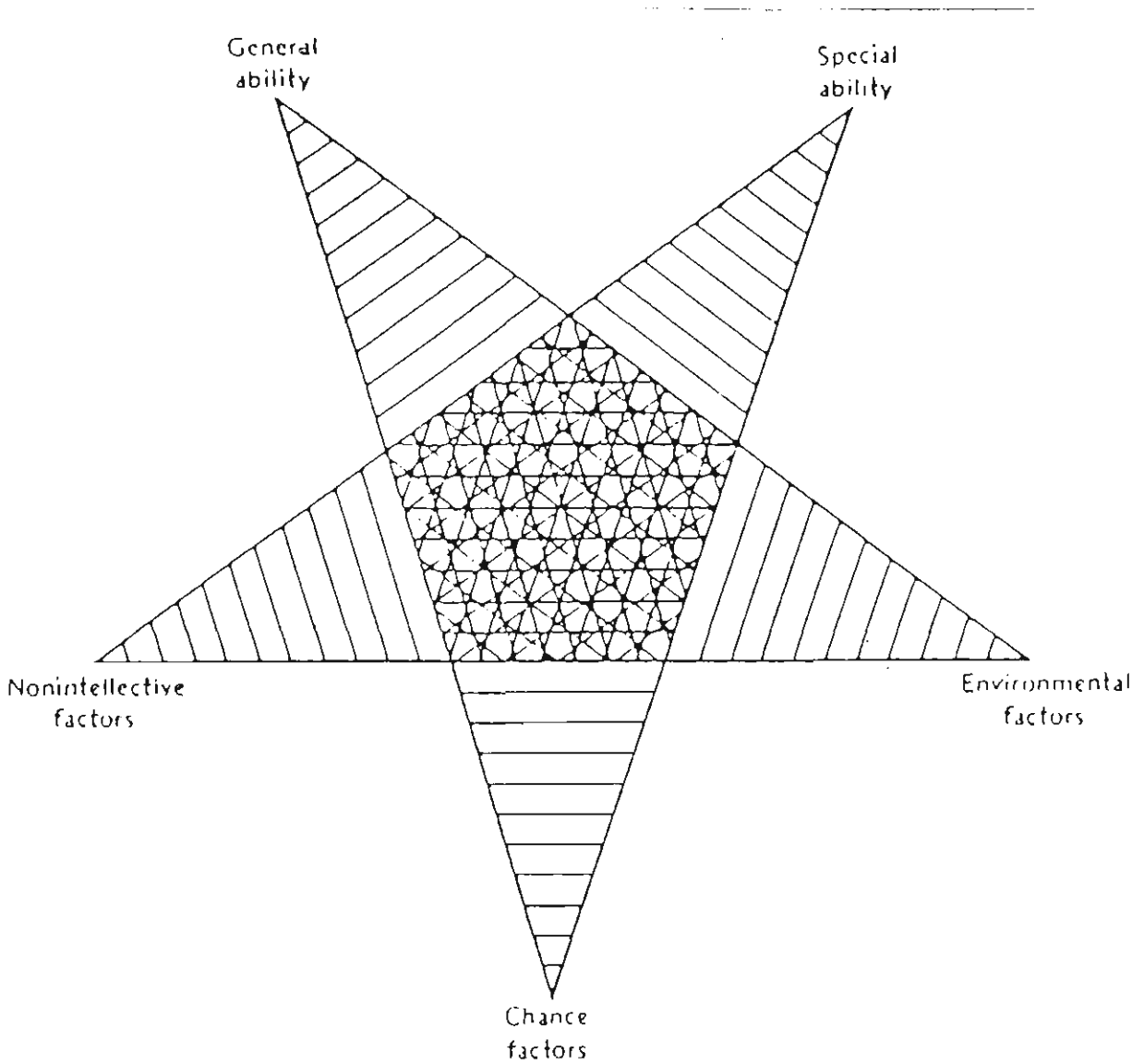


Figure 2.2. A proposed psychological definition of giftedness (Tannenbaum, 1983).

Gagné (1985) proposed a "Differentiated Method of Giftedness and Talent". He defined giftedness as being an exceptional competence in one or more domains and talent as being exceptional performance in one or more fields of human activity. Gagné, like Renzulli, suggested that motivation became one of the principal catalysts of the actualisation of giftedness into talent, more particularly for the emergence of exceptional talent. However, he relegated creativity to a less central role as one of his General Ability Domains. He also

described environment and personality as important catalysts to the realisation of talent, as shown in Figure 2.3.

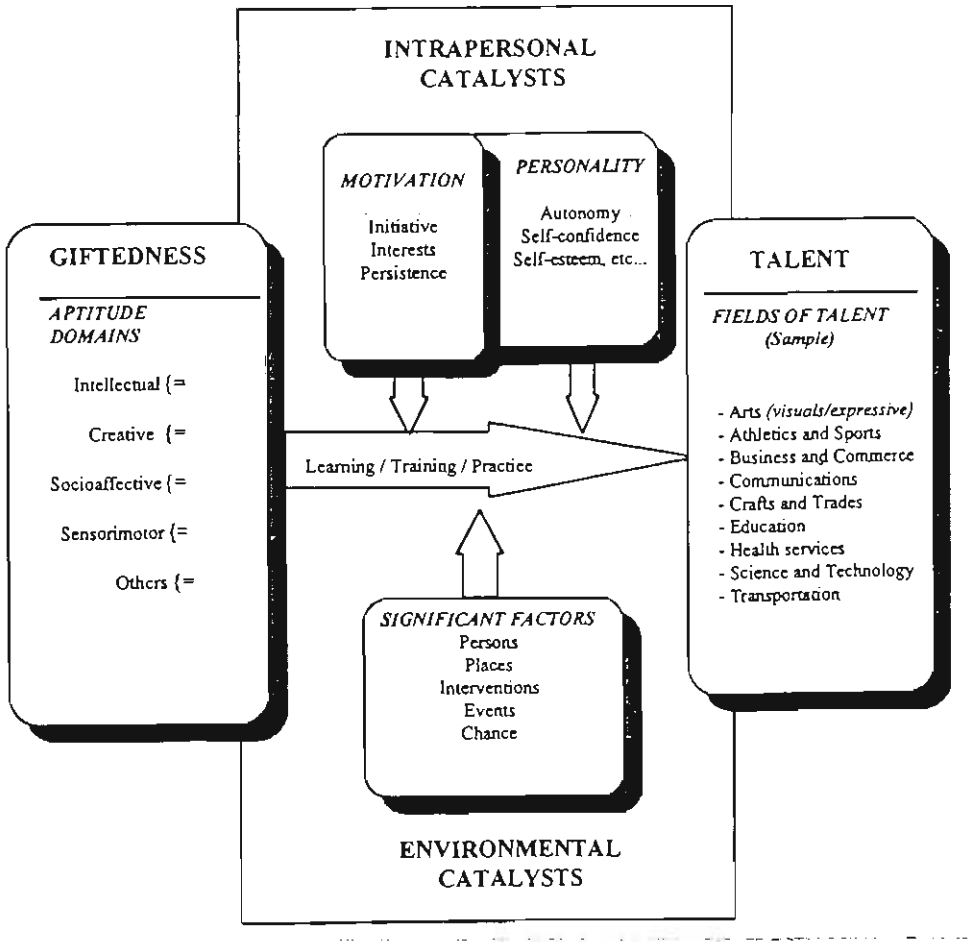


Figure 2.3.Gagné's differentiated model of giftedness and talent.

Reprinted from *International handbook of research and development of giftedness and talent* by Heller, K.A., Mönks, F.J. and Passow, H.A. (1993). p.72.

With giftedness showing itself in so many different ways, it is essential that for purposes of identification we consider gifts across a range of abilities. According to Gardner (1983), these are termed multiple intelligences. He contends that, "if we expand and reformulate our view of what counts as human intellect, we will be able to devise more appropriate ways of assessing it and more effective ways of educating it" (p. 4).

IDENTIFICATION PROCEDURES

The identification of gifted children is a contentious issue that continues to interest people in the broader educational arena. When considering the culturally diverse gifted child there is a need to incorporate a multicultural perspective to the identification process. In this way, the process of intercultural understanding will contribute to the identification of the gifted child from those diverse backgrounds. In accordance with the NSW DSE's publication *Education 2000*, (1992) "our mission is to educate the students of NSW for the benefit of each individual, the community and the nation" (p. 16).

The lack of representation of our culturally diverse students in gifted programs is a cause of considerable concern. Over many years, educational practitioners have been conditioned to equate the concept of intelligence with high performance in the academic domain, measured in the main by an IQ test or a battery of standardised tests of achievement - or a combination of both. Rarely did we look beyond the scope of these instruments to ascertain the overall intelligence of a child. The Stanford-Binet, WISC, Tola, Ravens and regular standardised tests determined almost entirely, without alteration, the present and future educational pathways of students. As stated by Vialle:

> The most critical problem that the field of gifted education has to confront is the reified view of giftedness that it has inherited from the IQ testing movement. Despite decades of evidence questioning its basic assumptions, the IQ test still looms large in the identification of gifted children. Additionally, as many of the studies in gifted education are based on a view that equates giftedness with performance on IQ tests, many of our working assumptions must also be in some doubt. I contend that the marriage of convenience between IQ testing and giftedness is no longer fertile and a formal separation is long overdue (Vialle,1993, p. 1).

Traditional Practices of Identification of Giftedness in Minorities

Reasons for the under representation of NESB, Aboriginal and Low Socio-economic Status (hereafter termed Low SES) students in the programs for the gifted have been generally attributed to the use of traditional identification procedures that rely on teacher

recommendations based on academic achievement and cut-off scores of IQ and/or achievement tests. Specific reasons for under-representation include:

1) negative environments,

2) lowered performance on standardised tests,

3) behavioural and cultural deviations from mainstream society (Braggett, 1985; Gibson, 1992; Harris, 1991; Harslett, 1992; Schlesinger, 1987; Start, 1990).

Recommendations or proposed solutions to remedy this problem have included: soliciting nominations from persons other than teachers (Blackshear, 1979; Davis, 1978); using checklists and rating scales specifically designed for target population students (Bernal, 1974; Gay, 1978; Torrance, 1977); modifying or altering traditional identification procedures (Fitzgibbon, 1975); developing culture-specific identification systems (Mercer, 1978); using quota systems (LeRose, 1978); developing programs designed to eliminate deficiencies prior to being considered for gifted programs (Johnson, Starnes, Gregory & Blaylock, 1985); using a matrix to interpret data from multiple sources (Baldwin, 1985); and developing a talent pool of high potential students who participate in certain program activities providing performance-based identification information (Renzulli & Reis, 1985). Yet despite these proposed solutions, the problem remains. Proportionately few students from the target population are being identified for participation in programs for gifted children (Baldwin, 1987). Language minority students are largely unrecognised as gifted and as a result, they are under-represented in programs for the gifted (Davis & Rimm, 1989; McLeod & Cropley, 1989; Maker, 1983). This situation is due in part to socio-economic stereotypes, ethnic prejudice, teachers' low expectations and differing manifestations of gifted traits in comparison to widely accepted standards of giftedness imposed by the dominant Anglo middle-class group.

Any proposal for special educational programs for gifted students presupposes some criteria according to which these students will be identified. Over many years three parameters for identification have been employed: general intelligence, special abilities and

creativity. Performance on one or more tests of general intelligence has been the most widely used criterion of giftedness. Freehill (1961) noted:

> That caution is needed in the interpretation of IQ scores does not mean that such a score is worthless. Far from it. The score of a properly administered intelligence test is widely accepted as the best single index of giftedness (Freehill, 1961, p. 17).

DeHaan and Havighurst also agreed:

> A relatively high level of measured intelligence, say IQ 120, is usually a pre-requisite of high achievement. Above this level individuals may display special aptitudes. Music and Mathematics would appear to be examples of aptitudes which manifest themselves early and continue; an early aptitude for art is, however less persistent. Other special abilities include verbal and mechanical skills. There are differences in cognitive style above this level, the most widely studied differences being intelligent/creative and convergent/divergent (DeHaan & Havighurst, 1961, p. 9).

For many years, all of the programs available for gifted students have tapped into those qualities that are consistent only with academic potential and thus intelligence tests and standardised tests might suffice as the major components of identification. Group intelligence tests may be a suitable mechanism for initial screening of some children but will most certainly overlook children with language difficulties, emotional or motivational problems, cultural impoverishment and children who may have particular talents in areas other than intellectual. Similar limitations are also true of achievement test batteries.

It is difficult to ignore many years of research in the field of genetics. "There is a major genetic component for cognitive behaviour, even though environment is also important" (Gallagher, 1996, p. 238). If all children brought the same experiences, verbal accomplishments and cultural backgrounds to the school situation then it would be agreed that the individual IQ tests probably represent the best single method of determining intelligence. However, because of the background characteristics of students within the representative minority groups, it is unrealistic to impose the same sophisticated language demands on the testee and gain a fair result. Furthermore, there exists a costliness in terms of professional time and services and there is also the distinct possibility of a cultural bias.

When relying on the assistance of teacher nominations, it is important to understand that, unfortunately, there exists a substantial bias towards nominating children who display characteristics highlighting academic achievements and performances, without consideration of the background of the child. This is probably the result of many years of educational brainwashing that equated 'gifted' with high intellectual capacity only. These practitioners lack the concept of the multi-faceted attributes of giftedness - those students who possess, as Renzulli (1978) propounded, "outstanding potentialities in art, in writing or in social leadership" (p. 2).

Teachers are not recognising all characteristics of giftedness in young students and thus it is highly probable that in many instances "failure to present complex and demanding tasks may lead to failure to identify our gifted and talented students" (Start, 1990, p. 615). It is unfortunate that when dealing with children from minority groups, teachers are much quicker and much more ready to perceive a slow learner and sometimes make hasty recommendations for special placement, remedial or English as a Second Language (hereafter ESL) assistance.

It is also unfortunate that quite often there exists a vocal antagonism towards any form of gifted programs. It is heard in questions and statements such as: "Why should we do anything for this group? Look at all the children who can't read or have severe learning difficulties. These bright children will learn anyway. We need them in heterogeneous groups, so the not so able learn from them and get motivated, and they won't get too big for their boots," are all comments regularly made by classroom teachers. Additionally, education's 'hidden policy' towards the disadvantaged has always been aimed at keeping the social strata intact. Start emphasised this premise by insisting that:

> At the current time, in the name of social justice and equality the education system - schools and teachers - follows a policy of doing little or nothing to extend the development of the gifted and talented child within mainstream curricula. With that policy of inaction, we actually increase social injustice and inequality. In disadvantaging all members of that group, the policy ensures that children from advantaged homes will be deprived least and those from disadvantaged homes deprived most, if not eliminated. Those children in disadvantaged homes generally do not emerge for they

> have been submerged by the further disadvantage of school indifference to their needs . . . it is easy to see some truth in the opponents' statements that gifted and talented students are to be found in middle class, educated ergo advantaged homes. The homes of those children can offset to some extent the lack of school interest in them (Start, 1990, p. 620).

Changing Traditions: Identification of Giftedness in Special Populations

The endeavours of educators to ensure that all children are given educational experiences and opportunities to maximise their full potential, has not been realised (Whitton, 1995).

Although there is evidence of some progress towards the inclusion of children from minority groups into gifted programs in the United States, mainly due to the massive financial support of the Jacob K. Javits Grants, only minimal inroads have been made in Australia. When it is accepted that Australia is truly a multicultural nation, and a large proportion of the school population are children from homes where standard English is not the norm, then educators must challenge the fact that there remains an obvious under-representation of these children from minority groups in any gifted programs. For educators, the challenge is presented by the fact that some children from poor families and deprived environments are high achievers. Many opinions exist, but no conclusive explanations have been proposed to explain the differential effects of adverse conditions in families or communities on the development of potential in NESB, Aboriginal and/or Low SES students. The precise nature of the relationships between home environment, SES, and children's academic success is unclear (Murphy, 1986). Bradely and Caldwell (1980) found wide variations in the kinds and amount of environmental stimulation provided by families from different SES backgrounds, and that cognitive measures are generally more strongly related to characteristics of home environment than to traditional measures of SES. Research on the effects of home environment on the achievement of target population students suggests that researchers should examine variables which appear to have a greater effect on achievement than SES, such as: verbal interaction between mothers and children, expectations of parents for achievement, affective relationships between parents and child,

discipline and control strategies, and parental beliefs and attributions. Until recently, research on NESB, Aboriginal and/or Low SES students had been based on a deficit model regarding cultural difference. Assumptions have been made, based on results of IQ and standardised test scores, that these students needed remediation skills because their home environment may have had a negative impact on their ability to achieve. The teaching of basic computation and literacy skills became the norm in educating such students. Educators of these special groups continually focused on interventions to remediate such deficiencies rather than dealing with talent development and identification (Braggett, 1985; Reid, 1992; Tonemah, 1992).

However, there have been some hopeful and significant procedural changes in Western Australia since the early 1980s. Harslett (1993) outlined:

> The Priority Exceptional Students Study (PRESS) program in the early 1980s explored identification and provision for socio-economically disadvantaged children (Deschamp, Robson & Nash, 1981; Deschamp & Robson, 1983), the Balga PEAC in the mid 1980s did the same for Aboriginal children (Fletcher, Gatti & Michael, 1985) as was the aim of a program at the Beaconsfield PEAC more recently in the field of children from non-English speaking backgrounds (Brown, Throssell & O'Brien, 1988). Common to all of these programs was that mainstream identification practices and provisions for special population gifted children was clearly inappropriate and alternatives had to be developed. These kinds of pioneering programs, together with the exceptional knowledge and skills that have been developed in Western Australia, provide schools with invaluable information to assist them to develop their programs, not just for the "regular" gifted, but also for those whose gifts and talents may not be so obvious because of such factors as culture, disability, gender, geographic isolation, and socio-economic background. It was within this context that the program in Geraldton, to identify and provide for gifted Aboriginal children, was commenced (Harslett, 1993, p. 1-2).

Teachers were concerned about the low proportion of Aboriginal students participating in the Primary and Extension and Challenge (PEAC) programs and felt the need to address the situation. They also felt an essential priority for change was to involve the Aboriginal community at large in all aspects of planning.

Similarly the Department of Education, Queensland has been active in endeavouring to develop improved identification strategies that will prove to be more inclusive of minority students in gifted programs, and in her research findings of 1995, Gibson noted:

> During 1993 and 1994 research, designed to describe a more effective approach for the identification of gifted students, was conducted in Queensland, Australia. The purpose of the research was to contribute to the improvement of current procedures used in the identification of minority children, particularly urban Aboriginal gifted children.... In the past, efforts to increase curriculum relevance for minority students has used a deficit model and focused almost exclusively on a remediation approach to education (Gibson, 1995, p. 1-2).

One premise of the Department of Education of Queensland's proposal for Gifted Education (1991) states: "We believe we can develop empirically sound identification instruments and systems that will more effectively include students not identified by traditional assessment methods" (p.2). A first step then must be to extend the definition of giftedness and clarify our target populations. The development of an effective identification system for these students with potential for gifted behaviour is critical in determining reliable and valid procedures and systems. Kearins commented that:

> The debate on the use of intelligence tests with minority culture children is well known. . . [It] includes (1) That non-verbal tests have greater cultural distance than verbal tests (Jensen, 1976). . . . (2) That intelligence tests with cultural distance can contribute to the identification minority culture gifted children, if used to compare children within the same cultural group (Cox & Daniels, 1983). . . . (3) That in general high scores on intelligence tests by minority culture children is directly related to their contact with European culture. This finding has been confirmed in numerous studies involving Aboriginal children (eg, de Lamos, 1979; McElwain & Kearney, 1970; Sheehan & Stewart, 1972; McIntyre, 1976). . . . (4) Cultural courtesy conventions should be known and observed when tests are administered, the tester should be known to and trusted by the respondents, and preferably be of the same culture (Kearins, 1983, in Harslett, 1993, p. 6-7).

UNDERREPRESENTATION OF MINORITY GROUPS IN PROGRAMS FOR GIFTED CHILDREN

For decades the notion of giftedness has been equated with test scores and more specifically IQ scores. The tradition of relying on IQ scores to define one's ability was

very prevalent with psychologists and educators at the beginning of the century when the technology of measurement took hold. Numbers became the determinants of what we believed students could accomplish in schools. There was a special comfort with this "solid objective" approach to assessment, even when this comfort was challenged when there appeared dramatic differences between the actual academic accomplishments of students and what the numbers had predicted the accomplishments should be.

However, given insight, along with new theories of intelligence by Gardner (1983) and Sternberg (1985), it is necessary to look much further afield, seek guidance from practitioners and policy makers, in the identification process of gifted students. Braggett (1992) reinforced this premise when he suggested:

> Nor will the traditional range of standardised tests be of very much use as they have been standardised on specific populations with different outlooks. The whole issue of identification challenges educators to broaden their concept of giftedness and talent to embrace other ethnic groups, to accept varied social customs, to tolerate a range of attitudes and to acknowledge pluralistic values (Braggett, 1992, p. 11).

Several years ago, Sanborn recommended guidelines for a comprehensive identification system (in Renzulli, Reis & Smith, 1981):

> * Apply multiple techniques over a long period of time.
> * Understand the individual, the cultural-experiential context, and the fields of activity in which he/she performs.
> * Employ self-chosen and required performances.
> * Allow considerable freedom of expression.
> * Reassess the adequacy of the identification program on a continuous basis; and,
> * Use the identification data as the primary basis for programming experiences (p. 29).

This recommendation was strongly supported by Braggett in his statement:

> In short, the older confined definition of giftedness is no longer applicable and schools must adapt to an expanded vision of giftedness and talent which encapsulates environmental stimulation, specialised interests, personal motivation and an acceptance of high self esteem. Gifted and talented behaviours are coupled not only to an innate and other personal qualities, but also to the school's actual program of developmental activities. Consequently, schools should ask (1) how they can first cultivate and develop giftedness, and then (2) how they might identify it. The school has a responsibility to provide the right environment in which identification is enhanced and promoted. It is a sobering thought,

> however, that school may equally retard the development of giftedness and talent among its students (Braggett, 1992, p. 7).

The educational system often penalises gifted students who are raised with significantly different values and attitudes from those found in the dominant culture (Maker, 1988). Our educational system is failing to identify and nurture the talents of gifted, culturally diverse students. Discrimination, misunderstanding, disinterest, and teachers' attitudes, inappropriate screening procedures and culturally biased IQ/Achievement tests complicate the identification of gifted, culturally diverse students (Johnson, Starnes, Gregory & Blaylock, 1985; Ortiz & Volloff, 1987).

Consequently, many gifted, culturally diverse students become underachievers. Horowitz & O'Brien (1986) assert that underachieving gifted youngsters are a major area of concern for educational research. Although there is a body of research concerning underachievement among gifted students, there is only a limited amount of research regarding NESB, Aboriginal and/or Low SES gifted underachievers. Considering the limited research information available, it has been found that non-cognitive factors (family, school, community, personal) have an impact on the academic achievement of these students. For instance, family factors which have been identified as determinants of students' low achievement are: discordance resulting from difference between mainstream and Ethnic cultures, poverty and low SES, language deficit, low parental education and conflict between parents and children (De La Rosa & Maw, 1990; Fitzpatrick, 1978).

Furthermore, if their teaching/learning experiences are perceived as irrelevant and unrewarding in terms of personal meaning and interests, there is no doubt that these children will develop poor attitudes and motivation which in turn foster low achievement levels. Moreover, they are at risk of being labelled underachievers, emotionally disturbed, behaviour problems, remedial or disruptive students. Gallagher & Courtright (1986) have noted, "We will have to decide whether certain special indicators will be accepted as measures of potential or aptitude that will choose those students whose experiences have been different from those of middle class students, broadly defined" (p. 105). It is critical

that the differentiated nature of giftedness in the target population be defined and described. Until then we cannot develop defensible procedures to identify or educate them, as noted by Roedell:

> Tests such as Stanford-Binet or WPPSI which include measures of children's ability to deal with language in subtle and sophisticated ways may under-estimate the abilities of children from bi-lingual backgrounds even if the children speak English fluently enough to communicate well in everyday situations (Roedell et al, 1980, p. 3).

Research by Baldwin (1977), Hilliard (1976) and Torrance (1971) also demonstrates that IQ and achievement tests alone cannot be depended upon to assess the capabilities of these children.

The low representation of these groups of children in programs for the gifted is a frustrating phenomenon and to make the best informed decisions we will need to look for patterns emerging from behaviours as well as test results - and we need to be able to make these identifications much earlier and thus plan elementary-level programs that will empower the students and facilitate our decision making.

One of the main barriers we must address is the "long history of controversy among practitioners and the general public about defining giftedness, characteristics of the gifted, and identifying and developing giftedness through educational programs" (Richert, 1987, p. 149). While educational equity is being violated by the lack of identification of significant sub-populations, identification instruments are being misused or used at inappropriate stages of the process, we will not see any significant change in the near future.

Frasier (1991) named four barriers to the identification of gifted minority students:

* attitudes regarding the abilities of these children to achieve.
* access that is limited due to screening procedures used.
* assessment that focuses entirely on the IQ.
* adaptations to curriculum rather than accommodations (p. 2).

To achieve the inclusion of all gifted children in special education programs then these barriers must be eliminated. In the terms of the journalist from the Washington Post: "We know there are many gifted children from economically deprived backgrounds out there. We just have to develop better ways of finding them" (Washington Post, 26/5/1993).

THE SCHOOL FOCUS: THE ROLE OF TEACHERS AND ADMINISTRATORS

What teachers are really doing at the grassroots level is still a critical issue to be addressed. It is essential that they change the broad global statement of identification of giftedness in children into classroom strategies that will actually transform theory into practice. In particular, the broader spectrum of classroom practitioners must be able to:

a) identify children who are classified as gifted and talented, and then

b) provide appropriate, effective programs to meet the real needs of these children.

In his Report to the Senate Select Committee in 1987, Dixon emphasised:

> [O]ne of the biggest problems that we face is the attitudes of principals and teachers towards the education of the gifted...[P]eople pay lip service to the needs of the gifted but when they actually come to making provisions in their schools and classrooms, they seem to be saying that they have limited resources and in that case those resources should be directed towards the non-achieving or under-achieving child (Dixon, in Hall, 1991, p. 83).

In her research findings of 1992, Gibson confirmed:

> Research findings . . . raised concerns about the limited scope of the selection procedures used to determine the participants of gifted programs in Queensland. It was found that 176 (57. 9%) of the programs chose target audiences through teacher nomination which usually employed academic excellence and school success as the main criteria. Existing research indicates that this practice misses a large proportion of the hidden gifted from populations such as the economically disadvantaged and the culturally diverse. Frasier (1991) states, "Reliance on teacher nominations has effectively precluded the identification of the gifts and talents of these students" (p. 235) (Gibson, 1992, p. 27-28).

According to Smith

> The gifted child enters life an eager learner, ready and able to challenge his parents, his caretakers, his teachers, and his entire universe. He is likely to become an active explorer of his world long before many children are even aware that the world exists. The gifted child's attack on his world is often headlong, far outpacing the expectations of the adult in his life. Unless damaged by his environment and experiences, this energy for learning and involvement in life is unlikely to subside and must be dealt with by parents, teachers, siblings, and anyone else in contact with the child (Smith, 1986, p. i).

It is relatively easy for teachers to recognise a gifted child or adolescent who fits the stated literature definitions. As a general rule, these children will catch the eye by way of their provocative behaviours: persistent questioning, unmeasurable enthusiasm for discovering new information and ideas, an innate cleverness and wit, a surprisingly advanced and appropriately - used vocabulary, a remarkable memory for facts and events, a huge bank of knowledge for their years, and so the list goes on. This child might also possess those extra highly-desirable characteristics like self-confidence, ability to eagerly tackle set tasks and actively participate in a variety of activities outside the classroom.

But what of *the others* : the quiet achievers, the exceptional gymnasts and musicians, the artists, the sportsmen? What about the children whose language, culture or socioeconomic position poses an almost insurmountable barrier to identification? Gibson also stated that:

> From the findings of the 1991 study indicating a lack of comprehensive identification procedures, a concern arose in respect to the problem of identifying gifted children from low socio-economic and culturally diverse populations. Identification practices recognised in the literature as being helpful in locating gifted students from these populations were absent from most programs. Frasier (1987) lists nine "commonly agreed upon" identification principles. They are:
> 1. The focus should be on the diversity within gifted populations. The gifted are not a homogeneous group nor do they express their talents in the same way.
> 2. The goal should be inclusion rather than exclusion of students.
> 3. Data should be gathered from multiple sources; a single criterion of giftedness should be avoided.
> 4. Both objective and subjective data should be collected.
> 5. Professionals and non-professionals who represent various areas of expertise and who are knowledgeable about behavioural indicators of giftedness should be involved.

> 6. Identification for giftedness should occur as early as possible, should consist of a series of steps, and should be continuous.
> 7. Special attention should be given to the different ways in which children from different cultures manifest behavioural indicators of giftedness.
> 8. Decision-making should be delayed until all pertinent data on a student have been reviewed.
> 9. Data collected during the identification process should be used to help determine the curriculum (Gibson, 1992, p. 28).

There is still the concern, however, that it is highly probable in our educational system, many children who fall into these minority groups have failed to be recognised. Despite the wealth of recent research on identification procedures of gifted children, particularly those from underserved populations within our society, educators continue to rely almost completely on IQ and achievement test scores (where cultural bias could be a factor distorting such results for children who are not native speakers of English - or even those who have only a very restricted English background) to place children in programs that will allow them to reach their full educational potential. This heightens the problem of identification.

To make the best informed decisions, it is essential to look for patterns emerging from behaviours as well as test results - and we need to be able to make these identifications much earlier than has been the case, and thus plan early-childhood level programs that will empower the students and facilitate our decision-making. Howes (1974) states:

> As each child is born an individual, he develops as an individual in individual ways and all experiences are personal and individual in meaning. The task of schooling is to build from the foundation up, upon a full recognition that the child, each child, is unique and individual. Considering individuality and uniqueness as basic building blocks is very different from building to foster or encourage individuality. The individual's uniqueness of experience, his perceptions and understandings, and his interests are the school's starting points from which to foster continued growth and development. These are the links to new experiences and extensions for further learning and patterning (Howes, 1974, p. 132).

INTERVENTION STRATEGIES ESSENTIAL FOR GIFTED CHILDREN IN SPECIAL POPULATIONS

Children learn when they are active participants in the teaching/learning process. Hagen (1980) reaffirms this premise when he states that:

> Giftedness is a concept or psychological construct . . . we cannot measure it directly. Instead giftedness must be inferred by observing certain characteristics or behaviours of individuals. These inferences will be accurate only to the extent that the characteristics or behaviours observed are relevant to the construct and are validly and reliably appraised (Hagen, 1980, p. 46).

This is not always the print-out of computer-assessed exams, or the graphic representation of an IQ test result.

It is impossible today for teachers to argue logically against the premise that every child in our schools should not only be encouraged, but aided to develop his or her intellectual potential to the fullest. It is necessary to encourage teachers to explore the many strategies available to them, that can be readily implemented at the system, school or classroom level to meet the differing needs of their students. This will enable each one to develop his or her potential in a conducive, co-operative, educational environment and thus more effectively engage gifted and talented students in the learning process. "Hence the arguments that are propounded by those who oppose the development of differentiated curricula and special programs for gifted students tend to be short on logic and long on rhetoric" (Gross, 1986, p. 7).

As Tannenbaum and Gagné have demonstrated in their models of multi-domained giftedness:

> [T]he gifted child is a multifaceted, multivariated human being. We have to understand the gifted child and his giftedness. We must create an atmosphere for the gifted child which conveys security, so that he dares to be his outgoing, warm, participating, as well as his bright dominating self and will feel the inner freedom to venture into a wider world without the perpetual need to compete, to be constantly admired, and always be the best. We need to create an atmosphere which will enable him to play and experiment, invent and create, love and share for his own good as well as that of society (Landau, 1981, p. 106).

Talented students require direct access to a wide range of quality activities that teach and challenge their thinking.

However, when visiting a variety of classrooms catering for the very young through to Year 12 students, it can be very quickly recognised that there is no one portrait of a gifted learner. Talents and strengths among the gifted vary as widely as they do with any sample of students drawn from the so-called average population. Educators, for convenience in their own research, have distinguished between the areas of giftedness (for example academic and social) or levels of giftedness (for example normally gifted and highly gifted: highly creative and highly talented). But exceptional children do not share common psychological traits or personalities and certainly express their needs in different ways. Some are outgoing risk takers, challengers of the status quo; some are quiet, steady workers, completely satisfied with their own private worlds; some need constant feed-back and reassurance, while others need constant encouragement and structure to perform to their potential.

Regardless of these diversities of academic and emotional profiles among gifted students, Clark enables us to make fairly accurate, educated assumptions towards the identification and program implementation using her analysis of gifted characteristics, independent of gender, race, culture or learning style (Mares, 1991). Clark (1983) divides gifted characteristics into five categories: cognitive; affective; physical; intuitive and societal. She clearly specifies the reasons, as she sees them, for effective classroom implementation of specific programs, namely curricula differentiation, that is "Examples of Related Needs" and "Possible Concomitant Problems". This converts into a table of action to assist classroom teachers.

Two very important issues that are of universal concern, must be addressed. The first is that of classroom instruction, particularly instruction for gifted students, and the second that it is highly probable that gifted students from minority groups will be overlooked.

Whatever definition of gifted we might choose to accept, we are speaking about children who are different. They are children who demonstrate high performance capabilities in intellectual, creative, artistic, leadership or specific academic fields. They are students who learn considerably more, faster, within or outside the structured school setting and can perform at an outstanding level in one or more of these giftedness categories. Because these students possess unusual academic potential and require opportunities not usually available in the normal classroom programs, some kind of special program is essential, as noted by Gibson:

> In making gifted programs more accessible to disadvantaged and culturally diverse children, Frasier (1987) advocates a paradigm focussed on relevant behavioural indicators and multiple criteria to guide the search for gifted children within these populations. Therefore it becomes necessary to identify indicators of potential giftedness in disadvantaged children that should be appraised and considered in arriving at program decisions (Gibson, 1992, p. 28).

Students at this level of ability learn faster and have different learning needs from other students, so materials and strategies used to bring about effective learning must also be different. As well as different materials, they need different support structures and different goals. These children are also ready to work on such processes as critical and divergent thinking and learning skills.

All students are entitled to an education that will enhance their own individual characteristics as learners, but gifted students possess such superior intellectual abilities and potential for outstanding achievement that they need differentiated educational opportunities if they are to realise their unique potential. As soon as these advanced skills are recognised, and the earlier the better, specific plans must be implemented to provide the necessary educational challenges. Braggett confirmed this notion when he stated:

> It is important to analyse giftedness and talent and to bring out the implications for teaching. When very young children in the preschool years, the infant grades and the early years of the primary school are involved, giftedness amounts to a high display of general abilities: the ability to think easily, well developed language and mathematical skills, a high degree of curiosity, and a wide store of information that has probably developed in part from the child's enriched background. This usually results in accelerated learning in comparison to one's age peers (Braggett, 1992, p. 7).

Research (Roedell et al, 1980; Wang & Walberg, 1985) continually expounds that children with high ability and special talents thrive in a child-centred environment, where motivational level is high, and continuous progress is supported. Narrowly defined learning tasks and objectives are replaced by opportunities to choose open-ended pursuits based on individual choice of preferences and interests, encouraging the indicators of high ability skills and talents to emerge. These indicators are thus used by the astute teacher to further design individual goals that will become the foundations for lifetime learning. The process of on-going assessment allows the child the opportunity to build his/her own construct of knowledge and understandings of the world, while capitalising on individual learning rates and styles.

The child-centred classroom provides a security based on successes, so that the child comes to view himself/herself with self confidence as a competent learner and a worthwhile human being. For the gifted child, in particular, it removes all grade barriers, presenting opportunities for self-evaluation - an essential tool for continued success. Yet it will be found that daily instruction is given to the whole class, usually in an expository mode, pitched at the middle ability group, and requiring the same activities and responses by all children. How can such a classroom be based on child successes, on-going progress or even student interests? In this kind of a repeated performance, year after year, the gifted child is at risk of quickly becoming a behavioural problem or even an underachiever.

It is an unfortunate statement of fact that when we look at school and classroom organisation, teaching programs, classroom practices and lesson presentations, that at present, there exists a common strand: the best way for the teacher, a Top-Down (all the same) Model.

Teaching gifted students is a challenge that confronts all teachers, in all classrooms. These students come from a variety of backgrounds and populations - NESB, Aboriginal and/or

Low SES; physically handicapped; learning disabled, as well as those regularly and easily recognised from the Middle Class Australians. Subsequently what must be considered, are the many choices of child-centred practices that are available for meeting the needs of these particular children. Catering for these individual needs of students, not only facilitates their intellectual development but is good teaching practice for all students, and classroom practices that encompass different learning styles of children, different rates of learning and different skill and knowledge levels, will ensure more effective learning for all students, especially for those designated potentially gifted.

It is essential, however, that a school must first establish a workable definition of gifted children, before any effective instructional decisions can be made. As Gibson alleges:

> Identification procedures are not only for selection of program participants but should provide input for curriculum planning and differentiation (Baldwin, 1987; Birch, 1984; Frasier, 1994; Rimm, 1984). Therefore the lack of an identification/assessment program seriously constrains efforts towards the effective programming for gifted and talented children in programs which are designed for everyone (Gibson, 1992, p. 28).

Recently the definition put forward by Gardner, was supported by many educational psychologists in the field of gifted education and reiterated by the NSW Government Policy Statement - Education of Gifted and Talented Students - "Gifted Students are those with potential to exhibit superior performance across a range of areas of endeavour" has been widely accepted. These areas will include: general academic precocity; specific academic aptitude - mathematics, language; musical; bodily - kinaesthetic; leadership and visual - spatial. As early as 1980, Tuttle and Becker urged educators to include a wider view of giftedness in implementing their classroom practices:

> Gifted and talented individuals have **special characteristics** that usually are not addressed in most classrooms. These students need the opportunity to interact with each other, to work with materials that challenge their abilities, and to develop those abilities without curricular-imposed limitations .... This can be accomplished only if they are provided with **programs designed** for their special characteristics and needs (Tuttle & Becker, 1980, p. 12).

When all of these issues are addressed and a variety of special programs is implemented

into the regular school curriculum, all children should be effectively educated to reach their full potential.

After identification of the individual needs of the child, specific programs tailored to meet these needs can be established, but will require constant evaluation, as over time emphases will undoubtedly change. Tuttle and Becker (1980) further urged teachers to employ continuous program revision and modification, but, in particular, to allow for special time together for these children to achieve their individual and group goals. They emphasise that:

> One of the basic assumptions underlying most of these organisational designs is that gifted and talented students should at some point be grouped together to provide for interaction and productive cooperation (Tuttle & Becker, 1980, p. 23).

Parameters to control appropriate decision-making for classroom instruction of potentially gifted children must be put into place. According to Treffinger (1982b; 1986a) there are specific conditions that must be considered when choosing a district/school gifted program. These include such items as:

> * What can we most efficiently do well with existing resources?
> * How do we select the most appropriate teachers?
> * Should we implement a program of individual professional development that will improve staff planning time, teaching skills and allow opportunities for teachers to develop skills enabling them to identify student characteristics and needs which in turn will develop effective classroom programs? "Gifted programming that is blended effectively with the total school program does not just happen. It must develop deliberately and gradually" (Davis & Rimm, 1989, p. 40).

The best district/school-based programs develop over time and must be based on a written statement of philosophy and goals with a well documented budget allocation.

Renzulli (1984; 1986), Renzulli, Reis and Smith (1981), and Renzulli and Smith (1978a) repeated "far too many programs entertain the children with fun-and-games time fillers and interest getters, with little attention to worthwhile, theory-based goals" (in Davis & Rimm, 1989, p. 51).

Current research (Frasier, 1987; Gibson, 1992; Harslett, 1993; Maker, 1993; Richert, 1985; Sawyer & Marquez, 1993) suggests that identification is not simply a matter of IQ testing but rather a process involving multiple criteria from a variety of sources. This method can be readily implemented at the within-school/classroom program.

Because it is within the regular classroom that most gifted children will be located, it is essential that if the needs of these children are to be effectively met a great deal of teacher inservicing must become a system-wide focus. Although acceleration, particularly early entry and grade skipping, is used to a limited degree within the educational system, the most widely used classroom strategy employed by teachers is that of curriculum differentiation. This allows the teaching environment and practices to create appropriate learning experiences for gifted children which will eliminate any boredom and frustration which in turn could affect them intellectually and emotionally. Where these modifications are not made, some students may develop behaviour problems, fail school and possibly even fail to make connections with meaningful work and friends in later life. "Curriculum for gifted and talented can only be marked as such if it encompasses elements which distinguish it from being suitable for the education of all children" (Tuttle & Becker, 1980, p. 91).

A differentiated educational program for the gifted young child needs to be fully integrated into the larger educational program of the school. It must involve the child as an integral member of the school community while still serving to meet any special needs. It must strive to achieve harmony among the large group, small group and individual need, balancing independence with interdependence. It must always consider the child as a whole individual, a child first and gifted second, one who possesses a unique combination of strengths and weaknesses.

Although educators (Clark, 1983; Davis & Rimm, 1989; Feldhusen, 1981; Gross, 1986; Hansen, 1992; Mares, 1991; Renzulli, 1978; Stanley, 1984; Winebrenner, 1992) see

gifted students in a variety of ways, it would be agreed that the encompassing characteristics would include such qualities as:

* curiosity - depth and/or breadth of interests
* rapidity and ease of learning
* the ability to transfer knowledge
* possession of a large knowledge base on a wide variety of topics (often things that other children are unaware of)
* advanced preference in books and films
* boredom when forced into redundant work and learning (Stanley's "Busy Work")
* an extensive vocabulary - used easily and accurately
* recognition of relationships
* alert, keenly observant and responds quickly
* sense of humour - often capable of creative mischief
* strong need of friendship - acceptance and respect from significant people in his/her life.

Thus "gifted and talented students need the intellectual challenge of a curriculum that is differentiated, both in content and in pace, which will allow them to be extended to their full academic capacity" (Gross, 1986, p.7). Enrichment in the regular classroom is probably the least effective method of catering for these needs, but if we can effectively implement Stanley's (1979) fourth type of relevant enrichment which is directly related to the needs of a specific child's gifts and talents, we will ensure educationally worthwhile instruction. This approach is based on the premise that because there is not just one gifted child in any given group, there is not just one strategy that must be utilised. The State Policy for Education of the Gifted reinforces this in its statement:

> All too often the gifted child is neglected and discouraged within our schools. The goals of excellence and equity incorporate a responsibility that these children . . . are nurtured and challenged to the limit of their ability (NSW Ministry of Education, 1991).

However, the greatest concern is the fact that the gifted minority students will be overlooked. According to Baldwin:

> It is sad when a pint is expected to yield a quart and fails to do so, but it is a tragic loss to society when a quart produces only a pint or much less for lack of proper societal effort and programs (Baldwin, 1973, p. 1).

Because these minority group children (and this particular instance, NESB, Aboriginal and those from a language-deprived background), enter school with not only a deficit in language, or no English at all, but also with a deficit of early educational experiences, identification of giftedness has been completely neglected. When it is finally realised that children from these groups are different from the norm, it is often late primary or secondary school years. This is too late. Their upper middle-class counterparts have been immersed in special programs of varying kinds and degrees for at least 5 years. Educational equity, however you might describe or define it, is fantasy not fact. If educators are truly committed to the premise of equal chance for all children, the process of this identification, because of the nature of the group, will of necessity be different. Cooke (1974) specified that:

> Early identification of the gifted disadvantaged and appraisal of the seeming range (intellectual, talented and creative socially gifted) and quality of their giftedness is of importance to the individual and our nation; the individual - because he is afforded an opportunity to develop his personal talents to the utmost - the nation benefits because he is afforded the opportunity to develop his personal talents to the utmost (Cooke, 1974, p. 86).

If teachers hold firm to the ideal that it is their responsibility to educate every child to his/her full potential, and they are able to identify these different gifted children this process must be followed with well-planned, qualitatively-differentiated programs. Good Staff Development programs that will provide training, at both the pre-service and in-service levels, and back-up support for teachers, for procedures of identification, curriculum differentiation and classroom strategies are essential, as insisted by McClelland:

> As students from impoverished backgrounds and from racial and ethnic minorities have achieved when provided with appropriate educational opportunities, they have demonstrated that the right kind of education can indeed transform potential into actually talented performance (McClelland et al, 1958, p. 8).

BILINGUAL EDUCATION PARTICULARLY IN THE EARLY SCHOOL YEARS

The Californian Longitudinal Study (Honzik, Macfarlane & Allen, 1948) and, later reinforced by the work of McCall, Applebaum and Hogarty (1973) demonstrated that IQ scores during childhood, fluctuate over time, and that the everyday living and background environment of the child, as well as sex-role socialisation affect these test results. Accepting these findings as valid, evidence suggests that if such uncontrolled variables can affect IQ scores, and measures used for placement in most programs for the academically gifted children, then specific interventions such as bilingual programs must also have an effect. Using their first language must surely have a positive effect on the classroom experiences of young children from minority cultures. Cummins (1989), Krashen (1981), Tikunoff (1985) and Willig (1986) identified:

> [Q]uality indicators that describe the optimum types of bilingual education programs. This research also concludes that maintenance model programs provide the highest quality educational experiences for language minority students (in Escamilla, 1992, p. 2).

It is unfortunate that societally, the most prevalent view of bilingual education, that is classroom experiences in the child's first language, is that it is helpful in the acquisition and expediency of English proficiency. Bilingual tuition in this form will help the language minority student keep pace with the academic content of the lessons, while mastering the skills of English. This stop-gap transitional mode attempt at instruction according to Hakuta is:

> With respect to the ultimate goal for limited English proficient students, then, some would conclude that the policy of transitional bilingual education is explicitly non-bilingual and incorporates a minimalist form of bilingualism for the period of time that students are in such programs (Hakuta, 1990, p. 3)

Cummins (1989) and Krashen (1987) argue that five to seven years of formal instruction in both languages are needed if students are to become truly bilingual and biliterate. Formal instruction, by definition, includes content area instruction as well as acquisition of oral

language. This will ensure that these potentially gifted minority children have mastered the skills of sophisticated English, enabling them to participate equally with their English-speaking peers and thus the opportunity to gain places in special programs, classes and schools. This premise was further supported by the following:

> The aims of the Multicultural Education Policy (1983) acknowledge the value of mother-tongue maintenance for NESB students and recognise that ... the use of English is essential for full participation in the life of the nation (Schlesinger, 1987, p. 161).

Asking how much bilingual education is enough for a child from a NES background is like asking how much of any subject is enough to fully develop the potential of any child. If these children are to become truly bilingual and biliterate, language maintenance programs must be set in place early and continue over time and grades, which according to Hakuta will benefit and even hasten the acquisition and competence of English skills. He states:

> There is no empirical support for the view that time spent on the first language detracts from the development of the second language. If anything, greater elaboration of the native language results in more efficient acquisition of the second language. ... The fact that older children are more efficient second language learners than younger children is seen as further evidence that stronger first-language proficiency translates into better second-language learning (Hakuta, 1990, p. 5).

The early years of the Australian Immigration Policy saw the majority of ethnic groups coming from Britain and Europe. However, because of the diversity of geographical origins of the more recent arrivals, the classroom difficulties of teaching English have greatly increased. According to Harris:

> Native languages of new immigrants differ vastly from English in pronunciation, grammatical structure and alphabet. These problems block the acquisition of reading skills and create an emotional barrier. Increased feelings of isolation can intensify frustration and confuse a child who is accustomed to learning with ease. At home there is often limited or no use of English, and home-school interface is minimal thus limiting language skills further (Harris, 1991, p. 26).

For children from a non English-speaking background it may take up to seven years to attain age-appropriate levels of classroom performances. Collier (1988) indicated that gifted students with limited English proficiency do catch up with native speakers, but the

majority will take considerably longer than their peers to achieve a similar level of competency. To assist the acceleration of this English acquisition, bilingualism is certainly recommended, and associated positively with greater cognitive development and cross language transfer of skills and knowledge.

Hakuta maintains:

> Bilingualism can lead to superior performance on a variety of intellectual skills. These can range from performance on tests of analysis of abstract visual patterns to measures of metalinguistic awareness - the ability to think abstractly about language and appreciate linguistic form rather than content.... One of the most fundamental assumptions underlying the efficiency of bilingual instruction is that skills and knowledge learned in the native language transfer to English.... Indeed, having the content knowledge already available should greatly facilitate the learning of the appropriate vocabulary items (in the second language) since they provide what Krashen (1985) calls "comprehensive input" (Hakuta, 1990, p. 7).

The concern that educators must address, is that students, who need instruction in their first language in order to perform competently in regular classroom activities and to reach their full educational potential, are not receiving this essential instruction. They are, in fact, being denied equal access to the curriculum offered in schools. When we consider gifted students from limited English proficient backgrounds, this concern becomes even more crucial as we are denying them the opportunity of gaining placement in special programs or even classroom enrichment activities. Olague assesses these classroom occurrences by stating:

> My third-grade teacher reads a poem. I smile, delighted to spend the afternoon immersed in literature until the teacher comes to an unfamiliar word. What is that word? I scan my classmates. They appear content and seem to understand the lesson. Why don't I? I slide down into my desk as the others excitedly wave their arms in the air hoping to participate in an animated discussion of the story. Why do I always feel so stupid and locked out of the secrets words possess?... Of course, a high aptitude and strong perseverance helped me emerge. However, my lack of useful terminology embarrassed me, and I worked twice as hard to compensate. I wanted to bridge the vocabulary gap that interfered with my opportunities to flourish, but escaping this handicap proved difficult. My brain stored information in two languages. Retrieving accurate terminology took longer for me. Some words I knew only in Spanish; some words I never experienced at all. No one in my elementary school believed I was smart. Teachers only saw the deficiencies. No one gave me a chance to blossom or to share my

> unique and enhances qualities. Yet, I know now that I was smart, and all my A's in college philosophy and math verified this. Still, I was locked out of the secrets the world held (Olague, 1993, p. 47).

A bilingual program begun in Kindergarten will ensure many educational, social and emotional benefits, not only for the children but also for the families involved in the program. The children settle into the school routine with as little trauma as possible and learn English by continuing their learning in a familiar language, while concurrently learning English. Readers, songs, nursery rhymes and fairy tales translated into the first language can be sent home and parents, previously unable to share in the school-learning process because of their own lack of English skills, can become facilitators in the learning process. The children and family realise that their own language is valued and should be maintained as they become totally bilingual, biliterate and equal participants with their native-English-speaking peers in all special programs. Bilingual gifted programs, in which the child's native language is valued, customs and cultural values are studied, offer a multitude of options.

Hakuta concisely summarises these educational underpinnings:

> Ultimately, though, basic researchers on bilingualism can be most helpful in interactively constructing, with educators, an accurate image of the bilingual child. The collage ... advances the image of a child whose social and cognitive capacities are enriched and amplified (rather than handicapped and impaired) by experiences with multiple languages. Children in bilingual education programs are within the reach of this vision, and it is our collective responsibility, as researchers and educators, to provide a learning environment that is conducive to the development of their full potential (Hakuta, 1990, p.10).

TEACHER TRAINING AND RESEARCH

Following the establishment of the World Council for Education of the Gifted and Talented in 1975, and the development of National Associations, Australia's State Departments of Education developed Policy Statements for gifted education. These were accompanied by series of voluntary in-services, workshops, conferences and short courses for teachers.

Later a small number of formal courses were included in teacher pre-service courses. However, "at the university level there is still an insignificant number of courses available and no conscientious effort has been made to establish any structured form of research into giftedness" (Whitton, 1995, p. 45).

This lack of any teacher training for teaching gifted children, was also emphasised by Start:

> Knowledge about these children should be part of every teacher's training, which is far from being the case. Relevant course offerings are almost rare and most were selective, not compulsory. A small minority (almost 10%) of institutions offered a full programme on gifted children and in none of these was that programme compulsory. In comparison, practically every institution offered something, mostly mandatory, on the child with some form of handicap - be it intellectual, social or economic. For every hour of tuition on the gifted child there were between 15 and 20 hours on the handicapped child (Start, 1990, p. 616).

In 1974 the Commonwealth Government had begun funding for all universities and colleges of advanced education (teacher training institutions) and in 1974 found that little was done in the way of teacher instruction for teaching gifted children. In their follow-up survey of 1984, they too found that only a minimal amount of change had occurred and like Start, Colston (in Whitton, 1995), reported that, in teacher training courses, only one hour of preparation for education of the gifted was allocated, compared with sixteen hours for the needs of the handicapped.

In NSW, Mitchell College of Advanced Education (now Bathurst Campus of Charles Sturt University) offered the first graduate course in gifted education. This course consisted of two years study conducted externally, and was followed by others across the country (Whitton, 1995).

At this time the Hawke Government (1987) also used a federal funding initiative to increase involvement in what was titled 'participation and equity'. The term 'equity' had now replaced 'equality' or 'equality of opportunity'. Under these auspices:

> [M]inority groups, such as girls, working class, ethnic, Aboriginal, rural and disabled students, were given recognition but deflected

> attention from the education's contribution to real social inequalities (Foster, 1987, p. 158).

These inequalities were further compounded when considering that many children from these social groups commonly labelled 'disadvantaged' were also gifted children. This was highlighted by the Department of Education of Western Australia in 1981 and the Federal Government in 1985, when two reports were written pointing out the difficulties of these 'labelled students'. These reports made strong recommendations for provision for them:

> Many exceptionally able children manage to overcome social and economic disadvantage; however, many others do not. It is important that children from such backgrounds are not doubly disadvantaged by schooling which produces expectations of achievement based on social origin (Deschamp, Robson & Nash, 1981, p. 1).

Braggett in his report for the Schools' Commission in Canberra (1985) argued:

> The term 'disadvantaged group'... is used by Australian educationalists to include Aborigines, children from non-English speaking backgrounds, children with disabilities, economically deprived children, isolated children and girls... [T]here are proportionately as many gifted children among these groups as there are in the wider population (Braggett, 1985, p.153).

It was evident that all teacher training must include all aspects of education of the gifted, and essentially focus on all groups within our complex society. In 1993, the NSW Ministerial Advisory Council on Teacher Education and Quality Teaching (in Whitton, 1995) listed six areas of competence that was expected of all beginning teachers. It also supplied guidelines to the Universities for structuring their teacher training programs. These programs were to include gifted and talented students within the Context of Teaching practices (Whitton, 1995). It is thus anticipated that for future directions these training modules will be evident through observable classroom strategies based on effective curriculum differentiation and educational outcomes for all children.

LEGITIMATION IN GIFTED EDUCATION

The concern of educators as we approach the 21st century must be the permanency and future for classroom provision of effective programs that will meet the needs of our potentially gifted children. If we continue to adhere to a real commitment of ensuring that all children will maximise their full potential, the notion of gifted education must be legitimated within the school, the district and the system. Instead of regarding such instruction as special or different, it must be included by regular classroom teachers as an essential and routine part of planning for all teaching and learning activities. To accomplish such a task, it is essential that the notion of providing services in the education of the gifted, is seen by educational practitioners and administrators, as well as the community at large, as an essential aspect of the global view and just as necessary as provisions made for other students with special needs. In Australia, as with other western countries, there are indicators that the gifted movement is slowing, even losing its impetus altogether. Braggett emphasises:

> One such issue involves the conception of giftedness that is espoused and the clarity with which it is publicised. When ability is conceived on a continuum and giftedness is viewed as an extension of normal ability, rather than a discrete quality that sets an individual apart, it is more likely to be accepted by educational systems and society generally. To this end, it is imperative for gifted provision to be seen as a normal activity within a total school approach in which a range of enrichment activities is provided for all students with increasing provision for those whose abilities are more taxing for the regular classroom teacher. Just as a group of learning disabled students eventually requires more specialised assistance, ... so some accelerated learners (gifted students) will eventually require part-time withdrawal, differentiated programs - and in some cases - special schools (Braggett, 1992, p. 12).

However, the field of gifted education has been under considerable attack for the past few years and the advocacy of such programs has met with indifference, even hostility, from within the teaching ranks as well as from the general community. The allocation of funds towards special programs for these "more fortunate" students is often seen as money mismanagement and certainly not a necessity. How can we, as researchers, administrators and practitioners convince the public that gifted education is an investment in the future and

not "the flip side of the pedagogy of the oppressed ... a strategy to single out the children of the affluent for training in leadership and dominance" (Margolin, 1996, p. 164)?

Like Margolin, there are those who unfortunately view gifted-child education as a mechanism aimed solely at articulating a power-structure that will enable the already affluent and powerful to become even more affluent and powerful. Margolin (1996) states emphatically that "the curriculum for this group was never focused on core academic subjects but rather on the concept of giftedness itself and benefits minimally education as a whole" (Margolin, 1996, p. 165).

In 1986 Howley reinforced this notion when she stated:

> By systematically diminishing the importance of relevant academic instruction, schools are able to cultivate a class of students who feel privileged but who are denied the privilege of fulfilling their academic potential (Howley, 1986, p. 122).

This was supported by Sawyer who also published a paper that condemned the motives of gifted education:

> The classroom activities commonly labelled "gifted education" are more focused on defining and supporting a class of people than on advanced academic preparation. Our corporate concern seems more often gifted children than gifted education. We narrowly define our task by those who benefit from our labours rather than the benefit we wish to give academically gifted children (Sawyer, 1988, p. 173).

No one would argue with the statement that children learn in a variety of ways and at various speeds. If by gifted students, it is meant those children who learn faster, remember more, and who can solve problems more quickly and better than other children at the same age, then it is obvious that these children really do exist. It is essential that everything is done to ensure that their educational progress and general welfare are not jeopardised due to lack of knowledge, inappropriate action and instruction, or neglect.

However, not all children display the same gifts, nor do they show them at the same time. Current theories of intelligence (Gardner, 1983; Sternberg, 1985) extend far beyond the analytical and logical abilities with which we have been so concerned over time. To

adequately cater for developing these multiple intelligences and to gain support with educators, Treffinger and Feldhusen (1996) suggest we must shift from the IQ testing movement and the solely intellectual orientation of gifted education and instead move towards the broader concept of talents in the "arts, vocational domains and social, interpersonal areas of human activities. It also represents a new educational orientation that is concerned with the development of talents at all levels, not just the highest and most precocious levels" (Treffinger & Feldhusen, 1996, p. 182).

One of the main difficulties facing educators of the gifted has been overcoming the resistance from those who claim that it is providing opportunities to those who are already privileged: "... any practice that shows lack of understanding of current educational issues or developments in cognitive and developmental psychology, or instruction, or that is not solidly grounded in theory and research, opens our work to criticism" (Callahan, 1996, p. 153). If we are genuinely concerned that while such antagonism is rife within our system the future of gifted education is threatened, it is essential that schools focus on the identification and development of talent in children across all domains of intelligence with particular attention to the provision of services that meet each individual's needs. Care must be taken to ensure that the term 'gifted' is used cautiously. "... [T]he term 'gifted' connotates a mature power rather than a developing ability and, therefore, is antithetical to recent research findings about children" (National Excellence: A Case for Developing America's Talent, 1993, p. 26). Through classroom programs and strategies adapted for effective teaching / learning experiences, an attitudinal change can be secured. The teacher's task is no longer simply to identify and label a certain child as gifted (or worse - not gifted) but to help children discover their own emerging strengths and in turn develop their own talents to the fullest.

This notion is reinforced by Treffinger and Feldhusen when they state:

> Emerging evidence seems to indicate that specific interventions are far more effective than general gifted treatments. ... The term gifted program has often meant a narrowly defined curriculum experience of an hour or two, peripherally enriching, not interfering with the regular curriculum, and following the tenets of one or another of the leading gurus of the field ... 'programming' to suggest a broad, rich

> array of services that might be provided: by different instructors or leaders (from within or without the school); in varying ways, places and times; and for varying individuals or groups of students (Treffinger & Feldhusen, 1996, p. 187-8).

This premise is also strongly supported by Braggett:

> The whole spectrum should be seen on a continuum, however, in which there is continuity, and the gifted students should not be seen as a discrete group who are qualitatively different from others. If this message is promulgated and accepted, the gifted movement will be increasingly accepted (Braggett, 1992, p. 12).

CONCLUSION

Australia has always been a multicultural nation and since World War II immigration trends from many parts of the world have contributed even further to the multicultural component of Australian society. Multiculturalism as a national value extends beyond an acknowledgment of demographic facts to a government commitment to promote cultural diversity as a positive feature of society and particularly the education system. There is an immediate need for an attitudinal and functional change in the selection process we use to determine participants for special education programs - incorporating gifted and talented.

As we look to the future, there are many problems confronting us in the field of gifted education. Probably the most contentious of these issues are those of identification and the subsequent development of effective programs which may vary from classroom-based enrichment activities, whole school acceleration alternatives, to withdrawal classes or special schools.

Identification procedures for many years relied completely on the IQ score or results of standardised tests. However, as the concept of intelligence broadened from the narrow focus of the psychometric measures to incorporate the notion of multiple intelligences, and as educators became concerned about the lack of representation of many groups in special

gifted programs, there has emerged an abundance of non-traditional assessment procedures for more inclusive identification.

Intelligence was for many years believed to be innate or inherited and remained fairly stable throughout life, as supported by Gallagher, based on the research of Lipsey and Wilson (1993):

> Evidence of the stability of IQ scores over time is rather substantial. ... After a quarter of a century of attempting to intervene positively in the developmental patterns of young children, we find only modest (half a standard deviation) improvement through programs of cognitive stimulation (Gallagher, 1996, p. 235).

Psychometric tests like those of Binet and Simon were originally devised to gauge the degree of intelligence possessed by children in order to assist better educational decisions to be made for students, particularly those with intellectual deficits. Later, the Wechsler tests which also yield a score for general intelligence, but are more informative because they also have a non-verbal (performance) scale, and the tests produce a series of sub-test scores, were also used for educational decision making. This decision making also included the identification and selection of students for gifted programs.

It is this narrow selection process and the minimal number of programs then offered, that has caused much resentment amongst teachers, educational administrators and the general public. Many educators hold the notion that giftedness is entirely restricted to school years, and that if the school provides the appropriate programs for the selected few, it has accomplished its task well. Tannenbaum (1986), however, emphasised that students, although demonstrating outstanding abilities, should only be perceived as potentially gifted, as true talents are not manifested until adult life. He further argues that school-age students may encounter and consume large amounts of knowledge, but it is not until the adult years that production of knowledge and inventiveness occurs. Surely it is highly probable, then, that while we maintain a strict numerical criterion for the purpose of identification of gifted students, we will omit many. A whole-school approach seems to be

a more logical framework on which to administer special programs and allow us to cast a much wider net. Braggett suggests:

> An acceptance of school-centred giftedness within a wider framework of life-span giftedness helps us to put the school's program into perspective: we should take the emphasis off the gifted program as a single entity and highlight the need for a total school approach in which a wide range of general enrichment and gifted programs is provided (Braggett, 1992, p. 6).

Hannan (1983) emphasised this need for change and reassessment in all groups as part of the whole society but recognised that such changes in perceptions and attitudes may be difficult for the dominant group, whose beliefs and practices had constituted the norm against which all others were measured. This viewpoint has three important implications for the gifted minorities in our system:

a) Culture-specific talents - where the school would need to be aware of, and gain an understanding of the child's background and values to be able to reliably identify culture-specific talents which may not be traditionally valued in the school setting.

b) Individuality - we have always been aware that although we can identify specific characteristics of talented children that draws them together as a group, they are nevertheless highly differentiated individuals. With these special groups of children the factors which contribute to the uniqueness of the child will differ considerably, particularly in their relationship to each other.

c) The Role of Language in the Identification Process - The traditional IQ tests are totally encased in language - some to a very high degree of complexity and sophistication - a language which precludes these special group children from full participation. In assessing the potential of these children, there is a need to consider that the measured performance of the child may not necessarily be an indication of true potential, especially if potential is being measured on performance expressed through written or spoken English.

For the purposes of this study, it has been accepted that scores resulting from tests and assessments made from standardised tests are probably, at this point in time, the best predictors for school success. What must be achieved in our systems, both public and

private sectors, is that all children regardless of their racial background, language or socio-economic status, have equity of opportunity in every facet of the educational arena, including placement in gifted programs. Therefore, it is necessary to move away from the concept of giftedness as an entity and look towards what we consider observable signs of gifted behaviours.

Braggett summarises this comprehensively, stating:

> *What is the best way to identify the gifted?* There is an assumption that a person has a fixed amount of giftedness and that we need only tap this reservoir, come up with a score on some test and then provide an appropriate educational program. But giftedness does not come in this type of package. When teachers understand the complexity and richness of giftedness, their approach to education changes.
>
> Gifted behaviour develops from:
>
> * one's own abilities
> * the emergence of specific talents over time
> * a supportive environment, sometimes the result of years of influence
> * relevant experiences at an appropriate, often optimum time
> * the motivation to succeed
> * the acceptance that one is personally capable of outstanding performance
>
> (Feldhusen, 1986; Gagné, 1991; Tannenbaum, 1991)
>
> There are even chance factors that help determine gifted behaviour and for which we can find no apparent cause (Braggett, 1992, p. 7).

Based on these premises, this research study was designed:

* to investigate the characteristics of potential academic giftedness displayed by young children (< 7years of age) from NESB, Aboriginal and/or Low Socio-Economic backgrounds;

* to establish an appropriate construct of giftedness based on the beliefs of teachers, parents and other educators of these groups of children;

* to enable teachers and other educators to look beyond IQ test results of these children as the only means of identification of giftedness — even in the academic domain, when considering special programs/placements;

* to develop comprehensive profiles of these children incorporating data from multiple sources in order to draw out common occurrences of 'strengths' and

'weaknesses' that need to be addressed through teachers' classroom planning and parental support in order to ensure that these potentially gifted youngsters will attain their full academic potential;

* to assist teachers to plan and develop appropriate teaching/learning strategies and effective intervention programs based on the knowledge of individual strengths and weaknesses of the children within their own particular classroom/group;

* to provide strategies for educators and parents that will enhance their awareness of emerging intelligences, which may be widely diverse, and displayed at any point in time through the early childhood years;

* to emphasise that the identification of giftedness is a 'continuous process' which will be facilitated where teachers maintain cumulative records of children's progress over time, namely in the form of Individual Portfolios, which contain all relevant data — work samples, academic achievement reports, results of standardised tests, anecdotal records;

* to assist schools to adopt a total school commitment to and the development of a 'Whole-School Gifted Education Policy' that will be inclusive of minority group children who demonstrate characteristics of giftedness in 'non-traditional' ways;

* to encourage a stronger and more regular discourse between the school and the family — especially where the language of the home is different, in any form, from that of the school and the demands of the educative system.

In July, 1993, the Targeted Programs Branch, Commonwealth Department of Employment, Education and Training, issued the discussion paper Equity Matters stating that:

> Equity is a concept: of fairness, justice, sharing and of getting a fair go. It is based on the belief that all Australian children have the right to an effective education. Schools are for all Australians - not just for the economically privileged, the able-bodied or the intellectually clever.
> But there are a significant number of young people at school today who are disadvantaged in a way which makes their educational experience less rich, less rewarding and less effective than their counterparts. The Commonwealth estimates that at least one million, or one in three, students are disadvantaged by factors

> outside their control so that they cannot fully participate in or benefit from their education.
> The most likely factors to influence a young person's education in this way are poverty, low socio-economic background, being an Aboriginal or Torres Strait Islander, isolation, rurality, non - English speaking background, poor literacy, family breakdown, violence and abuse. Only a national effort and consistency of commitment can be truly equitable. A National Strategy for Equity in Schooling will harness the efforts of all States, systems, authorities and the Commonwealth to improve access, participation and educational outcomes for disadvantaged students so that by 2001 all Australian school students will be sharing fairly in the rewards of a quality education (DEET, July, 1993).

The identification of disadvantaged gifted children is a critical issue in the education of the gifted. If educators are sincere about equity of educational opportunity, then it must be acknowledged that these children cannot be identified, applying the traditional methods, and much more comprehensive and broader identification processes must be sought. Using all the available instruments, promising practices of identification will result.

Early identification procedures supported by an effective intervention program (that will include Staff / Parent Development Modules) from the early grades will secure a brighter, richer and more rewarding future for a much greater number of our gifted children.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

INTRODUCTION

The overall purpose of this study was to establish an effective method for identifying young gifted children from minority groups, and subsequently develop an appropriate early intervention program that would facilitate the learning potential of these children. Teachers and parents would be supported to develop a wealth of essential teaching/learning strategies that would increase and broaden the experiences and challenges for the children, both inside and outside the school.

The research was within the boundaries of the Illawarra District, drawing on parents, teachers and children from a variety of ethnic and socio-economic backgrounds. The schools that participated in the study were enthusiastic to be totally involved and represented the public and independent sectors.

This chapter provides a detailed description of the methods and procedures that were used to determine a whole school community construct of giftedness; the understanding of the characteristics that indicate giftedness in young children, held by both parents and teachers; and reasons for under-representation of gifted children from minority groups, namely NESB, Aboriginal and low SES, in special programs for gifted children. It therefore addresses the possibility of implementing methods of identification of very young children (Kindergarten and Year 1) supported by an early intervention program. The sampling techniques, the research design, the procedures used to develop the instruments and collect data and the procedures used for analysis are explained.

RESEARCH QUESTIONS

The following questions guided this research.

1. How do NESB, Aboriginal, Low SES parents perceive giftedness in children?

1.1 How do the various cultural groups, namely Macedonian, Arabic (Lebanese), Turkish, Vietnamese, Portuguese, Spanish, Italian, Maltese and Aboriginal, construct their concept of giftedness, particularly in Early Childhood children?

1.2 How is the concept of giftedness within these cultures different from the generally accepted school concept?

2. What are significant behavioural and performance indicators of early childhood intellectual potential?

2. 1 What significant characteristics are nominated by parents as indicating potential giftedness in children?

2. 2 What significant characteristics do teachers, and Specialist Teachers nominate as indicating potential giftedness in children during early childhood years?

3. What is the nature of the home environment of these potentially gifted students?

3. 1 What home activities does the child enjoy / dislike?

3. 2 What activities within the home are conducive to the development of giftedness?

3. 3 What assistance is given to the child by older siblings?

3. 4 How well does the child interact with other family members, friends and other adults?

3. 5 Is there any sibling resentment of the potentially gifted child?

4. Are values or other personal conflicts between the school culture and the home culture affecting the identification of gifted NESB, Aboriginal, and Low SES students (eg conflicts about competition or achieving at the expense of others)?

5. Are teachers' perceptions of these students affecting nomination of students into Gifted and Talented Programs?

5. 1 Do teachers see a need for special programs for potentially gifted children?

5. 2 How do teachers make instructional decisions for potentially gifted children in their classes?

5. 3 To what extent is Portfolio Assessment used and valued?

6. What conclusions can be drawn from the test outcomes of the subjects and what are the implications for developing a new paradigm or theoretical perspective for the identification of giftedness in this population?

7. Is the IPMA1 a reliable and efficient instrument for the identification of young NESB, Aboriginal and low SES students?

DESIGN

In order to address these questions, the researcher conducted a multiple case study design to obtain necessary data from all the stakeholders: parents, teachers, administrators and students. This enabled the researcher to develop a construct of giftedness on which an effective in-service program for teachers and parents could be established, as well as developing reliable assessment mechanisms to identify these young potentially gifted minority students. The data from the identification process, in turn, was used to design an effective classroom intervention program to cater for the needs of these exceptional children.

Adelman, Jenkins & Kemmis (1976) emphasised the eclectic nature of the case study approach where researchers employ whatever methods are appropriate to gather the necessary data. This methodology is essentially one of enquiry, and because of the diversity of the interwoven methods, endeavours to produce a fair and accurate account of the enquiry. The researcher delves for evidence to describe, understand and explain rather than test hypotheses, although throughout the study it is inevitable that ideas and hypotheses will

be generated, guiding or even restructuring the research questions and data collection. "An essential quality of the case study worker is the ability to integrate the assorted bits of information, look for commonalities and idiosyncrasies, and provide a unified description and interpretation" (Hook, 1981, p. 252).

Kemmis & Stratton (1979) discuss Case Study as:

> Case Study work was regarded as fieldwork-based. It employs methods which inevitably take the case study worker into the field where the situation or phenomenon to be studied exists as a more or less 'naturally-occurring' state of affairs. For this reason, case study work is often described as naturalistic. In the field, case study workers often use 'informal' methods of other kinds of educational research. These methods may include informal interviews and observations, and document analysis. Case studies may use more formal methods too, however, when these are appropriate. . . .
> Case study was recognised to be 'politically-reactive'. This is equally characteristic of case study and other approaches to evaluation, but it is clear that the case study worker, in negotiating meanings with the participants in a situation is him or herself participating in the process by which the 'public meaning' of the situation is created. This is a political process, since the language in which a situation is described will favour some perspectives on it and tend to deny others: the evaluator must be sensitive to whose meanings are being reinforced in the conduct and reporting of a study, and whose are being neglected (Kemmis & Stratton, 1979, pp. 3-4).

In estimating the degree and nature of existing conditions on which this case study method of research was founded, many approaches to data collection were grouped together (Eichelberger, 1989; Lovell & Lawson, 1970). However, according to Verma and Beard, (1981, p. 19) each of them has one element in common, to depict the present position of a given situation.

As depicted in Table 3. 1, a variety of qualitative research methods was used to develop a comprehensive description of the actions and interactions for participants' perspectives and identification of meaning. In a qualitative research approach, data collection is approached with the assumption that nothing is trivial, that everything has the potential of being a clue that might unlock a more comprehensive understanding of what is being studied (Bogdan & Biklen, 1992). In this study the goal was to gain a more complete understanding of giftedness in currently underserved populations by collecting and analysing data from

multiple sources including students, teachers and families, and to use these data to construct reliable and valid identification instruments and instructional programs.

To establish a Community Derived Construct of Giftedness a combination of Questionnaires and Interviews was used, as shown in Table 3:1 Stage 1.

i) Parent Information:

Parents lacked spoken and written English so the questionnaires were translated into the dominant Community Languages - Macedonian, Portuguese, Italian, Arabic, Turkish, Maltese, Vietnamese and Spanish (see Appendix 1).

Although the Questionnaire did not allow the privilege of respondent answer clarification or improvement, through the use of supplementary questions to obtain the richest possible information and descriptions, a short questionnaire (consisting of three open-ended questions - for example: *How do you know if your little child (2-4 years old) is smart? What sort of things does he/she do that are different from things that other children of the same age do?*) was used initially with a very broad sample of the parent group. This information was also treated as parent nominations and assisted with selection of participants from Year 1 for the Research Sample.

These questionnaires were followed by a more structured Questionnaire to gain specific behavioural information about the children (see Appendix 2). This questionnaire was distributed to parents of children in the Research Sample only, not all parents of Kindergarten and Year 1 children at each site as was Questionnaire 1. This questionnaire comprised 30 specific characteristics of each child presented in a 'general' format. For example: *Follows 2 and 3 step instructions easily and quickly. Enjoys new experiences and activities. Asks lots of questions "How...?" "Why...?" etc.*

Table 3.1 Design of the Study

1995	Stage 1: Developing a Construct of Giftedness i] a) Questionnaire to Parents b) Informal Parent Forums n = all parents of K / Y1 children at each school - 200 ii] a) Questionnaire to Teachers and Counsellors b) Staff Development Sessions n = All teachers (full time classroom + non-teaching executive + specialists) at each site and respective counsellors - 50 iii] Interviews with Saturday Schools' Teachers n = (Dominant Community Languages attended by most children) - 7
1995	Stage 2: Selection of Participants i] Kindergarten: a) Random Sampling b) Special Inclusions (Teacher Referral) n = 30 ii] Year 1: a) Teacher Nomination b) Parent Nomination c) Researcher Inclusions n = 22
1995/6	Stage 3: Assessment Procedures i] Researcher testing of each child using IPMAI ii] Portfolio assessment of Work Samples iii] Classroom / Playground Observations iv] Ongoing Discussions with Teachers / Parents
1996	Stage 4: Development of an Intervention Educational Program for Schools

ii) Saturday Schools' Teachers:

To add valuable insight to, and to enable triangulation of data gained from parents, for the Community Derived Construct of Giftedness, interviews were conducted with the teachers of the Ethnic Schools Saturday classes, which many of the children attend. These interviews followed the Focused Interview format in a fairly formal manner. These interviews were also audiotaped when consent was given by the interviewee. This ensured that nothing of value was omitted or overlooked by the Researcher (see Appendix 4). Examples of items from this schedule include: *What do you see as characteristics of bright children? How are you able to identify a young (<5/6 years) gifted child? Are children sometimes gifted in more than one area?*

To establish each individual school's Construct of Giftedness, "Gifted and Talented Identification Questionnaire" (Forms 1 and 2) were administered to Teachers, Administrators and Counsellors respectively (Appendix 3). Unfortunately, one of the major hurdles to overcome as part of this study, was the negative attitudes towards giftedness within special populations. In almost every instance the classroom planning and instruction observed fell into the category of regular or even a deficit remedial approach to education for these students (Braggett, 1985; Reid, 1992; Tonemah, 1992). Teachers were difficult to convince that giftedness occurs in all school populations regardless of socio-economic status, country or area of birth, language spoken at home or physical disabilities.

All data gained from the Parent Questionnaires, Saturday School Teacher Interviews, and Teacher Questionnaires formed the basis of School Staff Development Sessions and/or Teacher Discussion Times to enable teachers to look beyond the common readily-quoted characteristics in the literature, to identify young children as potentially gifted when they enter school with limited non-standard English or no English at all.

To select the children of Stage 2 (n = 52), multiple methods were employed.

a) Kindergarten - random sampling across all sites was employed. Additional children were accepted into the group where teachers felt that the child demonstrated what they considered to be gifted characteristics.

b) Year 1 - Researcher selection made from:

i) Teacher nominations - using the Baldwin Identification Matrix 2 (1984).

ii) Parent nominations - from analysis of Questionnaires.

iii) Researcher observations.

In addition, the classroom teachers were asked to nominate students who were creative.

This final sample of 52 was selected, for Stage 3, based on analysis of all the preliminary data collected. These children were then tested using a researcher - designed instrument , as well as the Draw-a-Man Test (Harris, 1963), and where the participant was reasonably proficient in English, the Peabody Picture Vocabulary Test (Revised), which determines language dominance, was also administered.

Draw-a-Man Test (Harris, 1963) required the child to draw a man given only the following instructions: *Draw a picture of a man. Make the very best picture you can. Be sure to make the whole man, not just his head and shoulders.* The completed drawings were assessed according to the "Requirements for Scoring the Draw-a Man Scale" (Harris, 1963, p. 248 - 262). The scores were then converted to a Standard Score (Harris, 1963, p. 294 - 297).

This test was chosen because:

1) Its validity co-efficients are uniformly positive, although range from the low 20s to substantial 60s.

a) Correlation with Stanford-Binet is +.65.

b) "The drawing test probably measures somewhat specialised abilities rather than general intelligence of the conventional linguistic type" (Smith, 1937, p.761 in Harris, 1963, p. 35).

c) Correlations with WISC (using fifty 6years-old children) were: V.S. r =+.38; P.S. r=+.43; F.S. r = +.47 (Harris, 1963, p.35).

d) Correlations with Thurstone Primary Mental Abilities Test were: Reasoning r =+.40; Space r = +.38; Perception r +.37; (Harris, 1963, p.35).

e) Correlations with McQuarrie Test for Mechanical Ability were: Tapping r = +.23; Dotting r = +.16 (Harris, 1963, p.35).

and 2) Drawing is not seen as a 'Test', but an enjoyable classroom activity, by most children.

The Peabody Picture Vocabulary Test - Revised (Dunn & Dunn, 1981) is designed as an achievement test measuring the extent of English vocabulary acquisition. It requires the children to respond to a series of plates, each consisting of four clearly drawn, black and white pictures, eliminating any background or colour interference. The examiner uses the Practice Plates to establish that the child is confident in attempting what is required. The child must choose the 'correct match' for the spoken cue by pointingto the chosen picture. "The length of time required to establish the desired pointing behaviour will vary from child to child. Training plates may be repeated" (Dunn & Dunn, 1981, p. 15). This test is discontinued when six errors in eight consecutive items are made.

This test was chosen because:

1) Results of correlating the Peabody Picture Vocabulary Test with other vocabulary tests or vocabulary subtests of intelligence and psycholinguistic tests were quite strong (overall median value of .71).

a) Stanford - Binet Vocabulary Subtest r = .72

b) WISC Vocabulary Subtest r = .69

c) Van Alstyne Picture Vocabulary Test r = .86

d) Expressive One-Word Picture Vocabulary Test r = .70

(Dunn & Dunn, 1981, p. 62).

2) The examiner was not required to have completed formal course work in tests and measurement to administer the test.

3) The test setting and materials appeared more as a 'game' rather than a test format to the child, which established a happy environment and examiner/testee rapport.

Individual profiles were constructed and special attention was given to those students who scored high on at least 2 of the tests and who were also chosen by their teachers as highly creative pupils, as well as students who scored high on at least 2 of the 3 tests but who were not chosen by their classroom teacher as highly creative pupils.

One of the goals of subject selection was to ensure variability among the participants. Such variability helped strengthen the explanatory power of the data gathered. Miles and Huberman (1984) refer to the need for variability as essential when attempting to make cross-subject generalisations. This allowed the researcher to focus on different actors, same event in order to find meaning in data collected.

An appropriate intervention program for each school (Stage 4), was formulated so that classroom teachers could incorporate teaching/learning strategies in the regular mainstream classroom to enhance educational outcomes for the children who rated as potentially gifted.

SITES AND PARTICIPANTS

> Our mission is to educate the students of New South Wales for the benefit of each individual, the community and the nation (NSW DSE, 1992, p. 2).

From examination of available statistics within the Region, (Appendix 6) the number of children from minority populations represented in special gifted programs was very small. The sites chosen for research, therefore, were those whose populations consisted of high representation of NESB, Aboriginal, Low SES or a combination of these groups.

Choice of Sites

Although these schools' populations comprised the underserved populations within our education system, the structure and organisation of the sites allowed for diversity, giving a richer dimension to the study. In all of these schools, the staff has remained fairly constant over the past five years, and thus background knowledge of the families was highly valued as an integral part of the research - both in determining the Community Construct of Giftedness and for assisting with any Parent / Researcher discussions that arose over time.

Two of the schools are almost entirely NESB (90+%), with a high poverty rate, while another has a very high proportion of Aboriginal students (67%). The other had a very large mixture of NESB and low SES children.

Participants

The sample of 52 Students from Kindergarten and Year 1 was selected for an in-depth qualitative study.

The Kindergarten children were chosen by random sampling with the addition of any child specifically recommended by teacher or from researcher classroom observations.

The Year 1 children were selected:

1) by teachers using i) the Baldwin Matrix and/or

ii) specific nominations

2) by parents using a nominative inventory

3) by researcher from classroom observations and/or portfolio assessment (Appendix 7).

Primary Schools in the Public and Private Sectors (Infants' Departments), whose populations are mainly NESB, Aboriginal, Low SES or a combination of these, were

targeted for the study. All of these schools are contained within the South Coast Region (Educational), NSW. These schools were chosen because of:

1) willingness to be part of the study.

2) staff concerns about lack of representation of their children in any of the available gifted programs, and thus an enthusiastic staff support for the project.

3) proximity of location to the researcher.

DATA COLLECTION PROCEDURES

In this particular study, the emphasis for data collection was based on what Guba & Lincoln (1981) refer to as "Human as Instrument" (p. 193) although data collection from non-human sources also formed an integral part of the research.

The Research Study was made up of a combination of separate studies, which became inextricably interwoven throughout the Research, as indicated in Table 3. 2

Table 3.2 Data Source for Research Study

Research Questions	Data Source
1.1 How do the various cultures, namely Macedonian, Arabic (Lebanese), Turkish, Vietnamese, Portuguese, Spanish, Italian and Aboriginal, construct their concept of giftedness, particularly in early childhood?	1. Questionnaire - (translated into Home Languages as needed).
1.2 How is the concept of giftedness within these cultures different from the generally accepted school concept?	1. Comparison table - similarities & differences of Giftedness: Community / School.

2.1 What significant characteristics are nominated by parents as indicating potential giftedness in early childhood?	1. General Questionnaire. 2. Specific Questionnaire. 3. Parent Discussions / Interviews.
2.2 What significant characteristics do teachers nominate as indicating potential giftedness in early childhood?	1.Teacher Questionnaire. 2. Teacher Interviews. 3. Classroom Observation. 4. Review of "Matrix" Identification.
2.3 What significant characteristics do Counsellors, Program Directors, Special Teachers nominate as indicating potential giftedness in early childhood?	1. Counsellor Questionnaire. 2. Interviews with School Counsellors. 3. Program Director/Special Teacher Questionnaires.
3.1 What home activities does the child enjoy?	1. Specific Parent Questionnaire. 2. Parent Interview.
3.2 What activities within the home are conducive to the development of giftedness?	1. Specific Parent Questionnaire. 2. Parent Interview.
3.3 What assistance is given to the child by older siblings?	1. Parent Interview.
3.4 How well does the child interact with other family members, friends and other adults?	1. Parent Interview. 2. Teacher Interview.
3.5 Is there any "sibling resentment" of a potentially gifted child?	1. Parent Interview. 2. Teacher Interview.
4.0 Are values or other personal conflicts between the school culture and the home culture affecting the identification of gifted NESB, Aboriginal, Low SES students (eg conflicts about competition or achieving at the expense of others?	1. Parent Questionnaires. 2. Saturday Teacher Interviews. 3. Teacher Questionnaire. 4. Teacher Interviews.

5.1 Do teachers see a need for "special" programs for potentially gifted children in their classes?	1.Teacher Questionnaire. 2. Teacher Interviews. 3. Anecdotal Records of Classroom Observations.
5.2 How do teachers make instructional decisions for potentially gifted children in their classes?	1. Teacher Questionnaire. 2. Teacher Interviews. 3. Anecdotal Records of Classroom Observation.
5.3 To what extent is Portfolio Assessment used and valued?	1. Teacher Questionnaire. 2. Teacher Interviews. 3. Anecdotal Records of Researcher Observation.
6.0 What conclusions can be drawn from the test outcomes of the subjects and what are the implications for developing a new paradigm or theoretical perspective for the identification of giftedness in this population?	1. Anecdotal Records of classroom observations of children. 2. Test results of children. 3. Teacher Interviews. 4. Portfolio Assessment where applicable. 5. Specific Parent Questionnaire.
7.0 Is the IPMAI a reliable and efficient instrument for the identification of young NESB, Aboriginal, low SES students?	1. Profiles of children's test results from IPMAI. 2. Results of 'Draw a Man' Test. 3. Results of Peabody Picture Vocabulary Test.

INTERVIEWS AND QUESTIONNAIRES

To gain valuable data from as wide an audience as possible, it was decided to use a combination of Interview and Questionnaire data gathering techniques. The assistance of the various schools' Ethnic Aides allowed these schedules to be translated into home languages, and interpretive services were employed wherever necessary. This ensured that at all times, the parents and teachers were well informed, and thus became active participants in the entire research project.

In Cohen and Manion (1989) the definition of an interview is:

> [A] two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information focused by him or her on content specified by research objectives of systematic description, prediction or explanation (Cannell & Kahn, 1968 in Cohen & Manion, p. 307).

In this study, the researcher used a format that falls somewhere between the completely structured and the unstructured interview, in conjunction with other data gathering methods to obtain reliable and valid responses from many respondents, in order to gain a set of attitudes and beliefs. Bell describes this interview format as:

> Freedom to allow the respondent to talk about what is of central significance to him or her rather than to the interviewer is clearly important, but some loose structure does eliminate some of the problems of entirely structured interviews (Bell, 1989, p. 72).

This allowed for carefully-planned question structure and purpose but allowed for flexibility of sequence and wording in a formal environment.

The data derived from the interviews were gathered using a variety of recording techniques:

1) Using a Tape Recorder. Although this method provided an unchallengeable and complete source, providing the opportunity to review as often as necessary for accuracy and reliability, extra care had to be taken to ensure complete respondent trust with adult respondents.

2) Using Hand-Written Responses. This method of recording proved much less intrusive and demanded that the interviewer (recorder) remained completely attentive at all times. It also allowed the privilege of researcher interpolation of questions or answers without the respondent's knowledge. However, because it is humanly impossible to record everything spoken and because of the speed of writing, the handwriting could possibly become indecipherable at a later date, it was necessary to develop a "constant code". This also overcame the possibility of the respondent slowing the tempo of responses and losing the train of thought (Lincoln and Guba, 1985, p. 273).

The interview was also used to validate other methods of data collection, for example, observations, document appraisal and questionnaire responses. Cohen and Manion suggest that:

> An ideal questionnaire possesses the same properties as a good law. It is clear, unambiguous and uniformly workable. Its design must minimise potential errors from respondents . . . and coders. And since people's participation in surveys is voluntary, a questionnaire has to help in engaging their interest; encouraging their co-operation and eliciting answers as close as possible to the truth (Cohen & Manion, 1989, p. 103).

Like the interview, the questionnaire is designed to obtain facts and to ascertain an individual's opinions, beliefs or expectancies. For the audience intended, the questionnaire was chosen, as it tends to be more reliable because it is anonymous and encourages greater honesty on the part of the respondent. Conversely, there is the concern of low percentage of returns and that the questions may be misconstrued without the ability to have clarification or explanation.

To overcome any problems, to people of limited English literacy, the Parent Questionnaires were translated into the dominant community languages where it was assumed that the respondents were literate in the written form of their home language. These Parent Questionnaires were also kept very short and concise consisting of three open-ended questions.

The Teacher/Counsellor formats however, involved a variety of responses including open-ended questions and ranking of statements of giftedness.

OBSERVATIONS:

This research technique was chosen because it utilises direct contact between the researcher and the phenomena under investigation (Verma & Beard, 1981, p186). It was a most appropriate method of data collection for this study as it maximised the researcher's ability to gain specific insight into classroom behaviours of both the teachers and student participants within an environment where they were comfortable and relaxed. It allowed the researcher to use herself as a data source and build on her own tacit knowledge, as well as that of the group. Lincoln and Guba noted:

> A major advantage of the interview is that it permits the respondent to move back and forth in time - to reconstruct the past, interpret the present, and predict the future, all without leaving a comfortable armchair. A major advantage of direct observation, on the other hand, is that it provides here-and-now experience in depth. . . Observation is a powerful tool indeed (Lincoln & Guba, 1985, p. 273 - 274).

To gain observational data for this study required a dual role: a participant mode had to be adopted during classroom activities (teaching / learning sessions), while the non-participant mode, as described in Lincoln and Guba (p. 274), was required when interacting with the children. Where possible all observations were carried out in a "natural setting". As I became more familiar with the children, I was more readily accepted as "part of the group". For data gathering, a combination of field notes, field diaries and photography were employed. According to Guba and Lincoln:

> The basic methodological arguments for observation, then, may be summarised as these: observation . . . maximises the inquirer's ability to grasp motives, beliefs, concerns, interests, unconscious behaviours, customs and the like; observation . . . allows the inquirer to see the world as his subjects see it, to live in their time frames, to capture the phenomenon in and on its own terms, and to grasp the culture in its own natural, ongoing environment; observation . . . provides the inquirer with access to the emotional reactions of the group introspectively - that is, in a real sense it permits the observer to use himself as a data source; and observation . . . allows the observer to build on tacit knowledge,

> both his own and that of members of the group (Guba and Lincoln, 1981, p. 193 in Lincoln and Guba, 1985, p. 273).

DOCUMENTS AND RECORDS

Data collection from non-human sources, documents and records, focused on Portfolio Assessment, and where available, class grades and reports. These were used to add an extra perspective of the whole child: work products, that would be unavailable within the observation schedule, as well as rankings and grades scored during school life (in excess of one year for the Year 1 subjects, while only a few months for the Kindergarten participants). As stated by Lincoln and Guba:

> Documents and records are singularly useful sources of information although they have often been ignored, particularly in basic research and in evaluation (Lincoln & Guba, 1985, p. 276).

Lincoln and Guba (1985) define records as "written statements for a specific purpose" such as school grade results of pupils, and documents as "other than records . . . not specifically prepared at request of inquirer" such as teachers' lesson plans; pupil portfolios. Both of these sources were utilised to give extra depth to this study, as they were valued as "a rich source of information, contextually relevant and grounded in the contexts they represent" (Lincoln & Guba, 1985, p. 277).

The background and beliefs of Teachers; Counsellors; Program Organisers; Ethnic School Teachers; Parents and Community members to establish a construct of giftedness was necessary for several reasons:

a) to ascertain a considerable amount of data regarding out-of-school experiences to which these children had been exposed. This was essential to the study because the Teachers, who were very much involved in the entire research project, had to gain an insight into the pre-school home education valued as important and relevant by the Parents, but previously, often overlooked or devalued by Teachers. These characteristics then served as indicators for early giftedness identification.

b) to ascertain understanding, (if it existed) of all participants of potential giftedness that children displayed in any number of ways.

c) to determine the attitude, of teachers in particular, to the needs of potentially gifted youngsters, and what they actually did to accommodate these differences in the regular classroom situation. It was also essential to establish the staff consensus of giftedness, and broaden their understandings, thus allowing them to feel much more confident and competent in taking an active role in the study.

These data, as demonstrated in Figure 3. 1, enabled appropriate decision making for the later development of an effective Intervention Program, as well as assisting classroom observation and Pupil-Researcher talk during the second study (see Figure 3. 1).

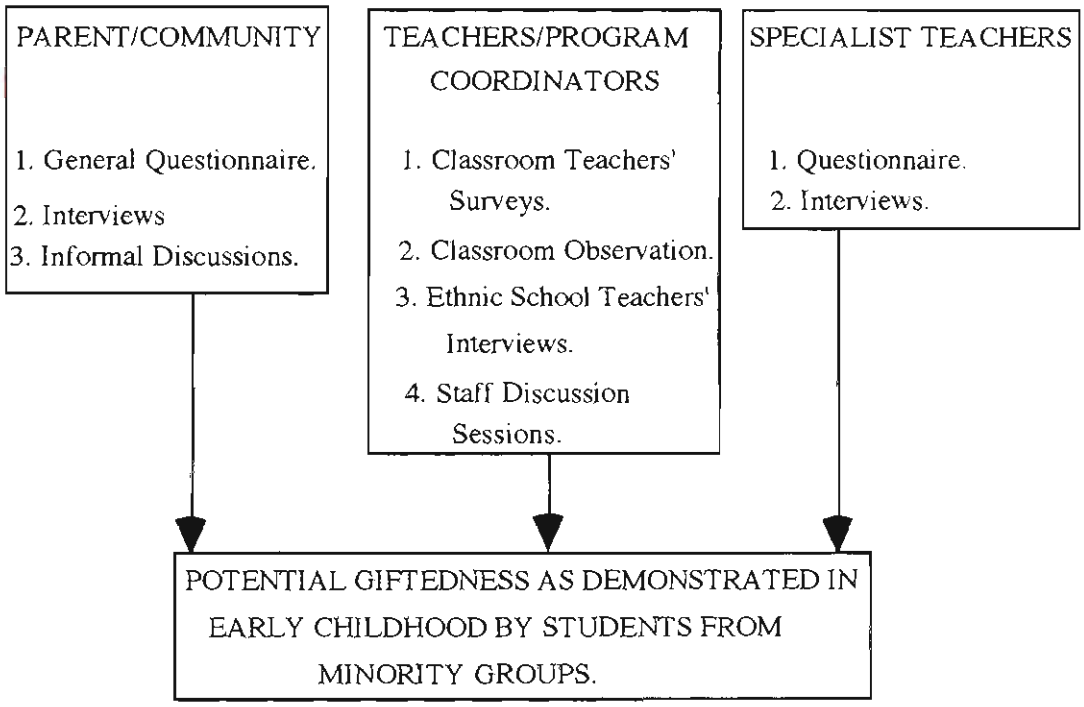


Figure 3.1 Establishing a Construct of Giftedness

This section of the Research consisted of the three phases of the Identification Process which involved extensive Researcher/Teacher/Parent Teamwork so that nothing valuable was overlooked or omitted.

Initial Screening Procedure

This phase was completed in order to gain a candidate pool of approximately 100 children from Kindergarten and Year 1 from the combined school populations that met the initial study criterion: namely NESB; Aboriginal; or Low SES backgrounds. As indicated in Figure 3. 2, the Kindergarten children were randomly selected with the addition of children nominated by Teachers as being different from the norm, or from Researcher Observations. Those children from Year 1 were selected based on multiple techniques.

Researcher observations formed one strand of the process, while teachers were asked to maintain Portfolios, Anecdotal Records and Checklists which were then utilised to triangulate data in order to determine the final sample of children who scored well in two or more of the selection criteria. To ensure that all teachers were familiar with the Portfolio, Anecdotal and Checklist procedure, Staff Development was given and regular informal meetings and discussion times were included throughout the project.

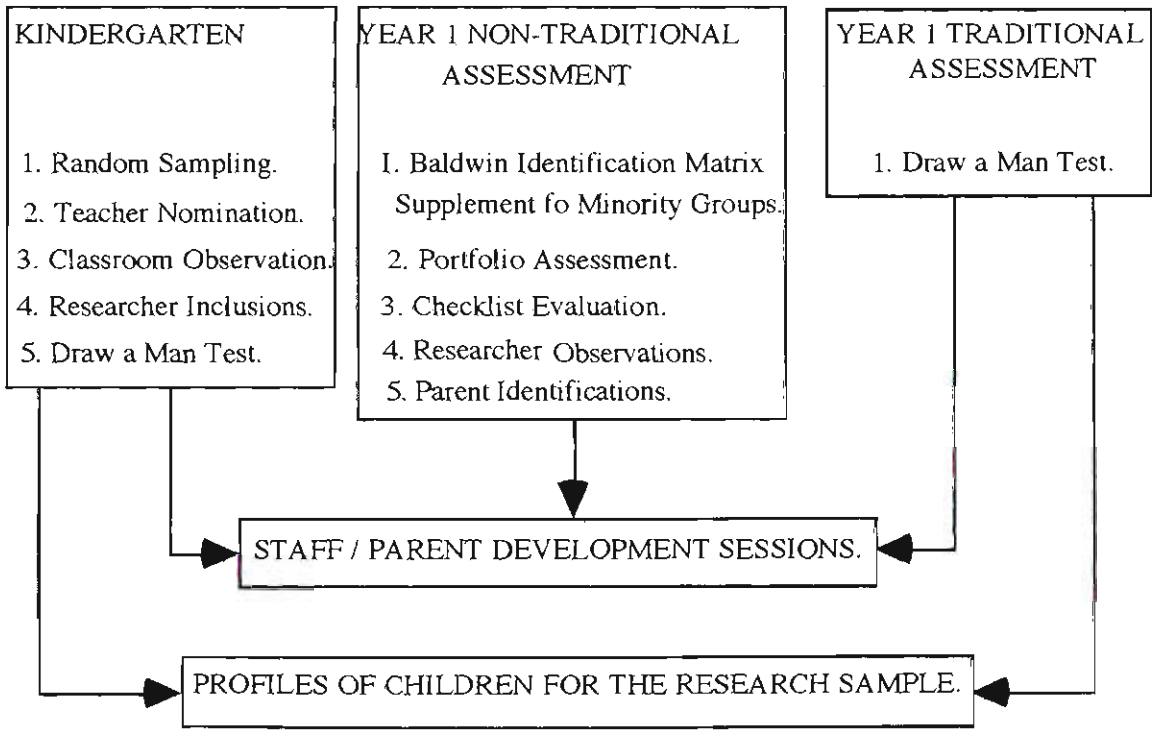


Figure 3.2 Selection Procedure for Research Sample.

Selection of Research Sample

Random sampling, as well as special nominations (n = 2) comprised the Kindergarten participants. From the Pool of Candidates from Year 1, all data gathered were considered, and those who maintained high outcomes across the profile, or who scored well in two or more areas were selected as the Research Sample. Because of the nature of the population, special care was employed, to err on the side of inclusion rather than exclusion, resulting in a final sample of 52 children. This final selection of participants was also made on the criteria that:

* there was a likelihood of remaining in the project for the necessary length of time;

* parents were happy to have their children involved, and were willing to give support as required; and

* the children had a good school attendance record.

Final selection was made from analysis of all gathered data.

Identification of Potential Giftedness

This phase of the process involved comprehensive, individual, diagnostic testing of the children through non-traditional and standardised assessment to establish individual case studies. These were then used for the development of an appropriate intervention program to meet the needs of these children as shown in Figure 3. 3.

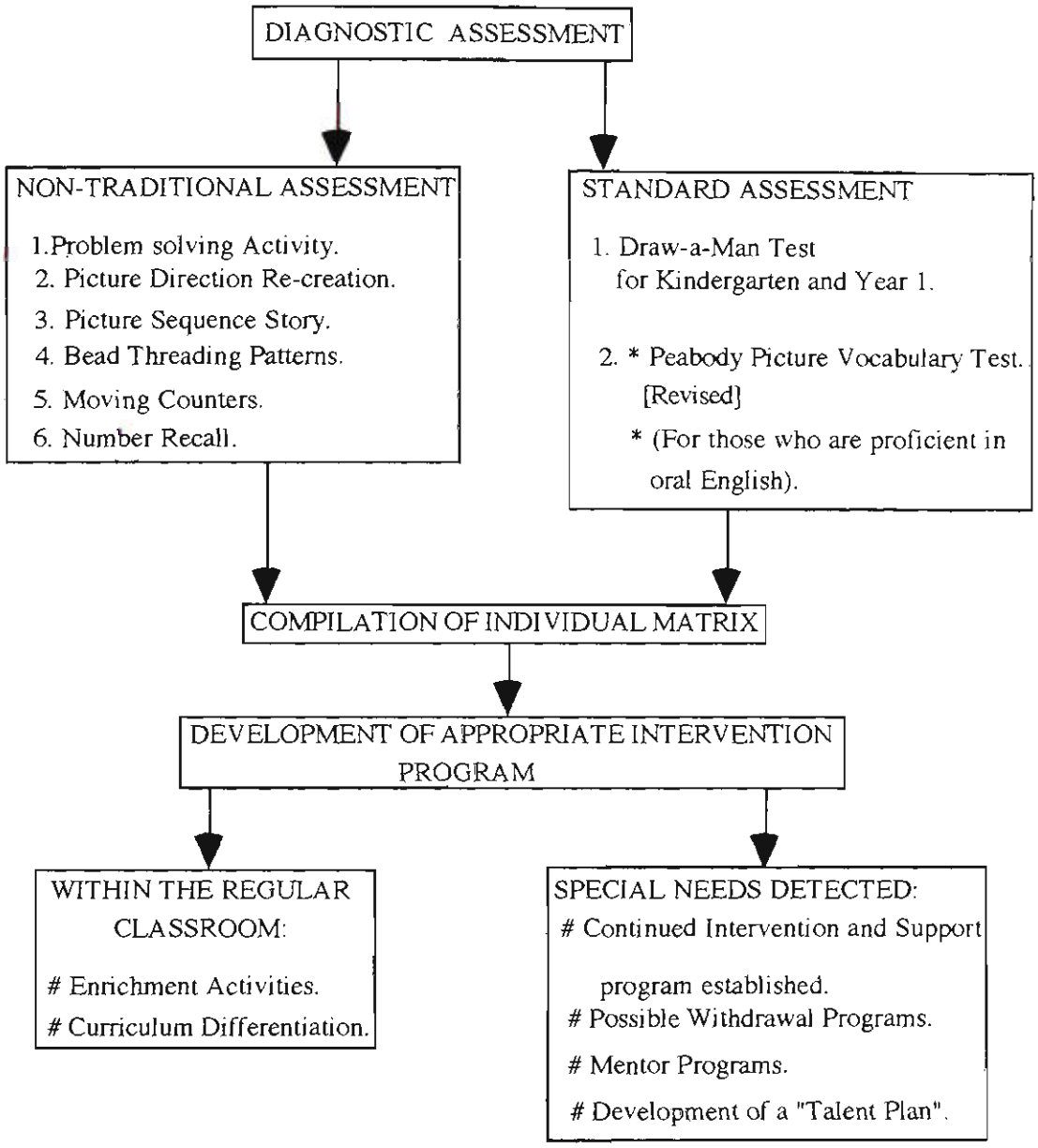


Figure 3.3 Identification of Potential Giftedness

DATA ANALYSIS PROCEDURES

The process of interpreting qualitative research extends far beyond merely collecting and tabulating factual data, contrary to the article of Verma and Beard which "only a structural attempt to obtain facts and opinions about the current condition of things" (1981, p.58). This study involved many elements from interwoven data sources which later required careful comparison of relationships to allow valid and reliable conclusions to be made. To

enhance ease of comparison and discovery of these relationships, it was necessary to tabulate the procedures involved. This also ensured that nothing of significance was omitted. These procedures are outlined in Table 3. 3

Table 3. 3: Data Analysis Procedures.

Data Collection Procedures	Sample	Data Recording Procedures	Data Preparation Procedures	Data Analysis Procedures
Interview	Teachers/Staff Parents (n=65) Ethnic School Teachers (n=7)	Field Notes Audiotaping	Summarising and Transcribing audio tape data	Categorisation onto tables Thematisation
Questionnaire	Teachers/Staff (n=57) Parents (n=200)	Written Questionnaire completion	Tabulation of Questionnaire Responses	Categorisation onto tables Thematisation
Observations	Children: * testing situation * classroom / playground behaviours * work attitudes (n=52)	Field Notes Photography Teachers' Observation Journals	Synthesising Summarising Categorising Matrix entry	Individual Profile
Documents and Records	Portfolio Assessment (n=52) Teachers' Records (n=11) Counsellor Comments (n=3)	Note-taking Photocopying of work samples	Synthesising Summarising Crosschecking with Observation data	Individual Profile
IPMAI Results	Children tested individually (n=52)	Field Notes Observations Audiotaping	Matrix entry Collation	Individual Profile School Profile

Because of the nature of the study, data were collected and analysed throughout, allowing for any necessary modification and ensuring a precise focus at all stages. "Data analysis done simultaneously with data collection enables you to focus and shape the study as it proceeds" (Glesne & Peshkin, 1992, p. 127).

Although Qualitative Methodology formed the main approach employed, some Quantitative Data gathering was also necessary. These methods are summarised in Table 3.4.

Table 3.4 The use of qualitative and quantitative methods in data collection.

1. Qualitative Methods:	
a) Survey Research -	
Questionnaire	Parents) Establishing the Community Construct of School Staff) Giftedness, to determine the:
Interview	Saturday School Teachers) a) 'climate' b) degree of understanding of giftedness c) acceptance of change in identification procedures School Staff)
b) Case Study -	
Questionnaire	a) Children selected as participants based on multiple criteria. b) Teachers' attitudes over time (Pre-Survey/Post-Survey).
Observations	c) Testing of children to establish areas of potential giftedness.
2 Quantitative Methods:	
a) Correlations	To establish any correlation between non-traditional and standardised test results which would facilitate the identification process.
b) Chi Square	a) To classify observations into discrete categories. b) To establish attitudes of teachers, parents and departmental personnel.

QUESTIONNAIRE

It was decided that tables and graphs were the best methods to prepare the information gained from Questionnaires for analysis. To classify these data for easy access as the analysis proceeded, a coding system was implemented for each of the formats. Miles and Huberman (1984) describe codes as "retrieval and organising devices that allow the analyst to spot quickly, pull out, then cluster all the segments relating to the particular question, hypothesis, concept or theme" (p. 56) Figures 3. 4, 3. 5 and 3. 6 indicate the keys for categories used in the analysis process of the Parents', Ethnic School Teachers' and Classroom Teachers' Questionnaires. Once these categories were formulated and labelled, connections between all categories were sought.

Table 3.5 Coding Categories for Parents' Questionnaire

CODE	CLASSIFICATION OF DATA
L.A.	Language Ability - speech proficiency; structure; sequence; vocabulary; communicative skills.
G.B.	Good Behaviour.
L.S.	Listening Skills.
F.I.	Follows Instructions.
R.A.	Reading Ability - alphabet; graphophonics; reads words, sentences, and/or stories; uses specific sections of a book, eg index, contents, picture clues.
C.E.	Engages easily/quickly in puzzles, games, problem solving activities.
C.A.	Creative - oral, written, games, problem solving, constructions, dance.

P.S.	Psychosocial Skills - mixes well; seeks older/adult company; enjoys/excels at team sport; considerate/sensitive towards others; exhibits maturity; sense of humour.
G.M.	Gross Motor Skills - energetic; well co-ordinated in a variety of games activities.
F.M.	Fine Motor Skills - using pencils, crayons, art materials well; tie laces etc.
A.A.	Artistic Ability - colour, patterns, creative drawing, illustrative skills.
M.S.	Memory Skills - recall; attention span.
C.	Curiosity - asks many/ varied/high order questions; wide interest range.
I.S.	Interpersonal Skills - self organisation; strong personality traits; self-care/hygiene; confident; risk taker; eager to learn/succeed; need to be challenged; manipulative.
M.A.	Musical Ability - singing; instrumental.
T.S.	Demonstrates a high level of Thinking and Reasoning Skills; applies logic.
M.C.	Mathematical Competency - counting; shape recognition; noting attributes; abstract manipulation; basic/advanced computation; time.
S.I.	Spatial Intelligence - direction; position; reconstruction tasks; perspective; body movement; streets and environment.
G.E.	General overall early development.
O.S.	Well developed/applied Observation Skills.

Table 3.6 Coding Categories for Ethnic Schools' Teachers' Questionnaire:

CODE	CLASSIFICATION OF DATA
A.A.	Advanced Academic Ability.
C.R.	Competency in Reading.
C.W.	Competency in Writing.
C.O.	Oral Competency.
M.I.	Mathematical Intelligence.
G.E.	General Early Developed (unspecified)
O.S.	Observation Skills well developed.

Table 3.7 Coding Categories for Classroom Teachers' Questionnaire:

CODE	CLASSIFICATION OF DATA
A.A.	Advanced Academic Ability.
L.I.	Linguistic / Verbal Intelligence.
M.	Motivation.
M.S.	Advanced Memory Skills.
O.I.	Originality / Initiative.
C.	Curiosity.

O.S.	Well developed Observation Skills.
G.K.	Excellent General Knowledge - broad interests.
R.L.	Rapid Learning capacity.
T.S.	Productive, Critical Thinking.
I.S.	Highly developed Interpersonal Skills.
M.D.	Highly developed Gross / Fine Motor Skills.

INTERVIEWS

The process of analysing interview data was adopted from the Cohen and Manion (1989) Model and was used for all interviews embodied in the research. In addition to the researcher notes made during interviews, all interviews were recorded and transcribed verbatim, allowing triangulation of data. This method also provided an objective view for overcoming the possibility of bias of the researcher when transcribing and comparing written comments specifically related to the research questions. These data were coded into specific categories which permitted interpretation of meaning and units of meaning relevant to the research questions. General and unique themes were thus readily identified, analysed and contextualised to form the various Constructs of Giftedness.

OBSERVATIONS

As indicated in Table 3.3, observations were used quite extensively to gather data throughout the study. These observations were recorded primarily as field notes using both double-entry as recommended by Berthoff (1981) as well as single entry. They were supported where applicable by photography, and transcribed audio-tape comments, particularly in the "testing" phase of the research. To eliminate any researcher bias and enhance reliability,

observational notes were regularly monitored to ensure as little interpretation as possible be included, but without eliminating commentary on all significant contributions.

An 'Observation Journal' as shown in Table 3.8 was also documented by the classroom Teachers throughout the research study. This participant observation enabled the teachers to become more aware of the variety of characteristics indicating giftedness that an individual may display. It also assisted the researcher to clarify or highlight responses where applicable, and facilitate a more complete global picture of each child. Interpretation of these data using scale 1 to 5 as for IPMAI was compiled into the relevant areas on a Matrix, as shown in Table 3.9 for each child.

Table 3.8 Teachers' Observation Journal

NAME . . *K. A 8*. . . . . .

DATE	CLASSROOM INTERACTION	PLAYGROUND INTERACTION	CLASSROOM PARTICIPATION	ACCOMPANYING WORK SAMPLES
24/5			*Read 66/66 sight words*	√
8/6	*Participates well in group work (number) - leadership skills demonstrated.*			
27/6			*High level of understanding and explanation of moral judgements (scripture lesson)*	
20/7		*Plays in an orderly manner - offers assistance and includes less popular children*		

8/8	*Sand-play - free activity) Creative representation of the dinosaur environment (following visit of "Dinosaurs at Large")*			
29/8			*Read all class-treatedbooks and own library books to ESL Teacher.*	
6/9			*Talked about Hermit Crabs - "Once they were sea-creatures, back in the dinosaur age but now they mainly live in fresh water*	
19/10		*Displays an advanced level of gross motor development*		
3/11			*Creative story writing - five well constructed sequential sentences - "Learning to Swim"*	√

Table 3. 9: Matrix for Recording Child's Intellectual Profile.

	Linguistic	Logical / Maths	Spatial	Musical	Bodily / Kinaesthetic	Interperson.	Intraperson.
Observed by Researcher							
Observed by Teacher							
Portfolio Assessment							
Child's Perception: a) self b) others							
Parent / Community Perception							
IPMAI Results							
Overall Rating							

Multiple viewpoints of a phenomenon, or triangulation, allow for greater accuracy of interpretation. This cross validation was achieved by between-methods triangulation in which two or more methods of data collection were used. Data for this study were collected from multiple data sources including written responses to open-ended questionnaires, in-depth interviews with each subject, interviews with faculty and parents, and school records. All interviews were tape recorded and transcribed. Field notes and observations made by the

investigators were added to the transcripts, in order to complete Comprehensive Member Checks (Lincoln & Guba, 1985).

> The Naturalist adopts the posture of "not knowing what is not known." Hence the study goes through several phases in order, first to get some handle on what is salient (that is, what one needs to find out about); second, to find out about it; and third, to check the findings in accordance with trustworthiness procedures and gaining closure (Lincoln & Guba, 1985, p. 235).

These phases were constantly repeated throughout the study and provisional reports were taken back to the sites and subjected to the scrutiny of the persons who provided information. These certified data had been recorded as constructed by the participants, and when or where necessary, corrections, amendments or extensions were made to establish credibility of each 'case' (Lincoln & Guba, 1985, p. 236).

Data analysis for this study was accomplished using a four-step-reduction process, and a school profile was obtained by comparing data from each child to determine common themes.

In the first instance, all data were read thoroughly. Statements of all subjects were coded as either objective perceptions of occurrences or subjectives of the same events. Second, the subjects' perceptions were recorded and organised to reveal themes of each subject, and then group of subjects. Subjects' perceptions were organised under theme headings and coded, labelled and recorded onto separate theme sheets. Third, the various instruments used to gather additional data were coded and used to gain additional insight into individual subjects and subject groups. Data gathered from these instruments were used to further develop themes and aid in the creation of a profile of individual subject and groups of subjects. In the final step of the process, the researcher examined the data of each subject and group of subjects in order to identify perceptual themes subjects had in common. Theme sheets developed in the second phase of data analysis were compared and contrasted to reveal similarities and variations in themes. Profiles were created and the shared themes and

profiles examined to analyse their relationship to the literature on identifying NESB, Aboriginal and Low SES students.

Once this process was completed, the information was used to provide answers to the research questions which guided this study.

QUALITY OF DATA: ADDRESSING VALIDITY AND RELIABILITY

To enhance validity and reliability of this research study, the following techniques were incorporated.

Content Validity:

The content of the tests was assessed by the classroom teacher for understanding prior to administering. Standardisation on testing was utilised. All other tests were streamlined where possible.

Construct Validity:

i) The Random Sampling of Kindergarten enabled the validation of the Test as a reliable instrument for selection of young gifted children from a language deficit background.

ii) All selected children were included for the entire study period, and data were continually collected and analysed. These children were selected as quickly as feasible from the beginning of the 1995 School Year and followed through into 1996, to allow for full and accurate assessment.

iii) In order to obtain the most accurate image of subjects' gifted behaviours, case studies of target students were constructed from multiple data sources. Data from case studies were synthesised on a profile system designed to interpret information from objective and subjective sources. These data provided the basis for establishing a paradigm for identifying gifted minority students. Triangulation of data, (multiple sources of evidence which support conclusions), was also employed wherever possible.

Internal Validity:

Validity is quality of the conclusions and the processes through which they were reached. In qualitative research, credibility becomes the major validity concern. Credibility is dependent upon the apparent accuracy of the data and all the processes described above to increase the reliability. In order to enhance the validity and credibility of the findings of this study, the researcher used triangulation between methods, the depth of detail, and continuous cross-checking for accuracy. In addition, to establish and maintain high data quality, all recorded data were monitored - reviewed, corrected and completed at the end of every day. If doubts about data quality arose during the reviews, plans were made to record additional data to clarify or replace any inadequate material.

To ensure that accurate and truthful responses were obtained, it was essential to establish an element of trust between the researcher and all respondents and participants from the inception of the inquiry.

> Building and maintaining trust is an important task for the field inquirer. While no-one would argue that the existence of trust will automatically lead to credible data, the inverse seems indubitable. Respondents are much more likely to be both candid and forthcoming if they respect the inquirer and believe in her integrity (Lincoln & Guba, 1985, p. 256).

External Validity:

However, inferences and predictions can only be made to similar samples of the study. Open - ended questionnaires and interviews were based on a comprehensive review of the literature and consultation with experts in each of the target groups.

Reliability:

Reliability or accuracy of the observations was enhanced by:

1. Tape recorded interviews and audio-taping of students, teachers and parents allowed the researcher to examine and clarify information.

2. Researcher's journal or diary assisted in dealing with emotions - personal reactions, frustrations and assessments of life - during field work. It was anticipated that this journal would also help to interpret field notes and create an awareness of the researcher's personal biases.

3. To ensure that all stages of the study were accurately and explicitly documented, an audit trail (Miles & Huberman,1984) was an essential feature of the Research Processes. (Table 3. 10)

The findings of this study are suitable to similar populations, and would assist curriculum differentiation, which when effectively established and fully implemented will enhance equity of educational outcomes.

Educational psychology deals with experiences and behaviours of people in response to educational situations, that is the conditions that facilitate and inhibit learning. It extracts from the total field of psychology the essentials that are significant to one's being and social function, primarily dealing with learning and teaching - the total educational environment. Educational psychology is concerned with the learning process - with all aspects and stages of an individual's growth and development, and thus it is important to teachers and researchers alike, if it assists them to do their job more efficiently. This is reiterated by Gardner, who states:

> My review of earlier studies of intelligence and cognition has suggested the existence of a number of different intellectual strengths, or competences, each of which may have its own developmental history (Gardner, 1985, p. 59).

Table 3:10 Audit Trail Matrix (from Miles & Huberman, 1984, p. 245).

PROCEDURAL STEPS	DECISION RULES	CONCLUSIONS/ RESEARCHER COMMENTS
(number each one, explain what and how it was done)	(used to determine step taken)	

1. Choosing sites - and participants.	Four sites chosen because of willingness to participate, composition of student population and proximity.	One site eliminated - would have added valuable insight, but all criteria set down for study met by those included.
2. School Staff Development and Parent Discussion Sessions initiated.	1. Staff and Parents well informed and included in Research Project from the beginning. 2. All Questionnaires well explained - translated into home language and use of interpreters as required.	Enthusiastic reception and depth of cooperation from both Staff and Parents, assisted all aspects of study.
3. "Saturday School" Teachers Interviewed.	Input onpupil assessment and progression highly valued to add to "Construct of Giftedness".	Cooperative, insightful responses.
4. Selection of Participants for Research Project.	1. Kindergarten children selected at random with addition of special nominations by teacher or researcher. 2. Year 1 children selected using multiple criteria - teachers, parents, researcher.	~ A good cross section of Kindergarten children nominated, but omission of a 'gifted disabled' child was made. ~ Both teacher and parent nomination relied heavily on 'verbal / linguistic intelligence' strength.
5. Recording and Coding of classroom observations: ~ notes taken on site ~ transcribed as soon as possible (usually same day) ~ codes to facilitate speed and accuracy.	1. Note taking to be comprehensive but unobtrusive. Notes transcribed as soon as possible to ensure that nothing relevant is omitted. 3. Coding used to enable quick access of information when re-read.	Children and teachers quickly accepted my presence, participation and note taking.
6. Individual Assessment of participants.	1. Audiotaping as well as field notes of all responses used to determine domains and depth of giftedness. 2. Because of time factor involved, assessment spread over several sessions to eliminate any mental fatigue that might occur. 3. Portfolio Assessment and Teachers' records also used for more complete picture of each child.	~ Good participant / researcher rapport ensured best results. ~ In all participants, signs of strong 'interpersonal intelligence' was obvious.
7. Appropriate Intervention Program developed to enhance the educational equity of young potentially gifted children from minority populations.	1. Individual Profiles compiled. 2. Clustering of school strengths and weaknesses as indicated from pupil profiles. 3. Development of intervention programs to meet these needs. 4. Inservicing / Staff Development Sessions to assist program implementation into classroom planning.	~ Most need identified in quality language and creativity areas. ~ Thinking Skills and curiosity need to be extended through problem solving activities. ~ Assistance needed in developing challenging classroom activities.

Therefore, this research study endeavours to address the possibility of implementing non-traditional methods of identification of very young children (K, Y1) from minority groups within the educational system, namely NESB, Aboriginal and low SES. This was followed up with an early intervention package that would enable the classroom teachers to increase and broaden the experiences and challenges for the children.

CHAPTER 4

RESULTS OF THE STUDY

This chapter deals specifically with the findings of the study, and will be organised in response to each of the Research Questions in turn. It provides a detailed analysis of the data collected from all sites and using a wide variety of techniques.

RESEARCH QUESTION 1

What are the perceptions of ability held by NESB, Aboriginal, low SES students and their parents?

1.1 How do the various cultures, namely Macedonian, Arabic (Lebanese), Turkish, Vietnamese, Spanish, Italian Portuguese, Maltese and Aboriginal, construct their concept of giftedness, particularly in Early Childhood?

Initially all parents of children in Kindergarten and Year 1 were invited to attend informal meetings conducted by each school. These meetings were organised by letter from the Principal / Executive of each site, briefly explaining the research plan and inviting parents and friends to participate. The meetings were all scheduled during the last hour of the school day so that parents were able to meet their children as they finished school which coincided with the conclusion of the meeting. Where schools had the benefit of on-Staff Ethnic Aides, they were also present and able to interpret for clarification and explanation as the meetings proceeded.

The aims of these meetings were to immediately establish a rapport with the parents of the children with whom I would be working very closely during the following months, but mainly to ascertain their concepts of giftedness. To achieve this goal, at the conclusion of each meeting, the parents were asked to complete a very short open-ended questionnaire to

ascertain the extent of their understanding of the term "giftedness". These Questionnaires were translated into all the community languages where necessary in order to avoid any unnecessary misunderstandings (see Appendix 1).

During the Information Session, several questions were raised by the parents for Researcher clarification, that is explanation of the term gifted; selection process - particularly the concern for the children who were not selected. This discussion time ensured that all parents were completely familiar with, and would be willingly included in, the entire research project. The fact that the main outcome of the work would assist them and the teachers to be able to more readily identify potentially gifted children and subsequently plan appropriate educational experiences for them, was very well received.

From 200 questionnaires distributed, 147 were completed and returned (a response rate of 73.5%), which was a very pleasing result. This indicated the level of interest on the part of the parents and reconfirmed their determination to do whatever they could to ensure the education their children received was the most appropriate and beneficial for them.

These questionnaires were then analysed and coded in order to gain:

1) an overall view of the parents' responses as indicated in Table 4.1.
2) responses according to Ethnic background as depicted in Figure 4.1 a - c.
3) responses according to sites shown in Figure 4.2.

and thus establish a Parent / Community construct of giftedness.

From analysis of all three open-ended questions contained in the Parent Questionnaire (as shown in Table 4.1), a large majority (63.5%) viewed exceptional language skills as the main indicator of giftedness, while Mathematical competency (which was expected, by the researcher, to be highly rated), was tenth in rank order with only 28.5% of families nominating it. While language competency was regarded extremely highly, the remaining nine indicators received a fairly even distribution of responses (28.5% - 52.5%) from

families. Other indicators (as shown in Table 3.5) scored negligible responses (1.5% - 17%).

Table 4.1 Total parent response

Code	Classification of Data	Tally
L.A.	Language Ability - speech proficiency; structure; sequence; vocabulary; communicative skills.	94
C.A.	Creative - oral, written games; problem solving; constructions; dance; drama.	80
R.A.	Reading Ability - alphabet; graphophonics; reads words, sentences, and/or stories; uses specific sections of a book eg contents, picture clues.	74
C.	Curiosity - asks many/varied high order questions; wide interest range.	59
T.S.	Thinking Skills - demonstrates high level of thinking and reasoning, far beyond age expectancy; applies logic.	51
P.S.	Psychosocial Skills - mixes well; seeks older/adult company; enjoys/excels at team sports; considerate/sensitive towards others; exhibits maturity; sense of humour.	48
I.S.	Interpersonal Skills - self-organisation; strong personality traits; self care/hygiene; confident; risk-taker; eager to learn/succeed; need to be challenged; manipulative.	47
M.S.	Memory Skills - good recall of past (even long ago) occurrences; unusual attention span.	43
M.	Motivation - engages readily/quickly in puzzles, games, and classroom activities.	43
M.C.	Mathematical Competency - counting; shape recognition; noting attributes; abstract manipulation; basic to advanced computational skills; understands time.	42

When these responses were analysed according to ethnic backgrounds (Figure 4.1 a-c), other patterns were revealed. While Mathematical competency scored only 28% of the total parent response, it was ranked very highly by both Arabic and Turkish groups. These

same groups considered Curiosity, Creativity and Thinking Skills as unimportant as indicators of giftedness. The groups from Southern European backgrounds were very similar in nominating indicators of giftedness.

The ethnic groups, which made up the multicultural population of the three sites, included in the research were Macedonian (Mac), Italian (It), Arabic - Lebanese (Ar), Turkish (Tur), Spanish (Sp), Maltese (Mal), Vietnamese (Viet), Portuguese (Por) and Australian (Aus).

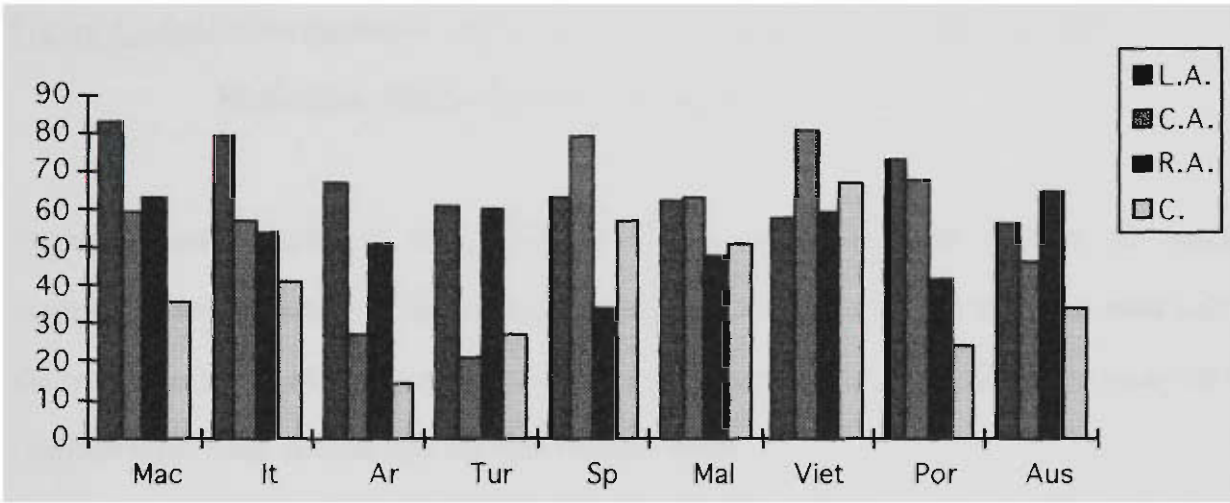


Figure 4.1 (a) Parent responses according to ethnic background: Language Ability; Creativity; Reading Ability; Curiosity.

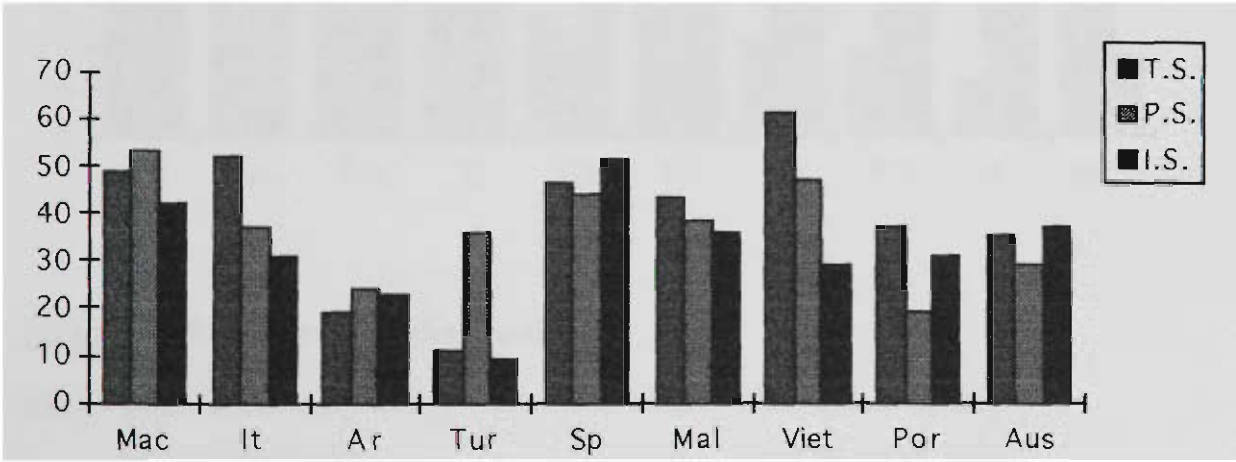


Figure 4.1 (b) Parent responses according to ethnic background: Thinking Skills; Psychosocial Skills; Interpersonal Skills.

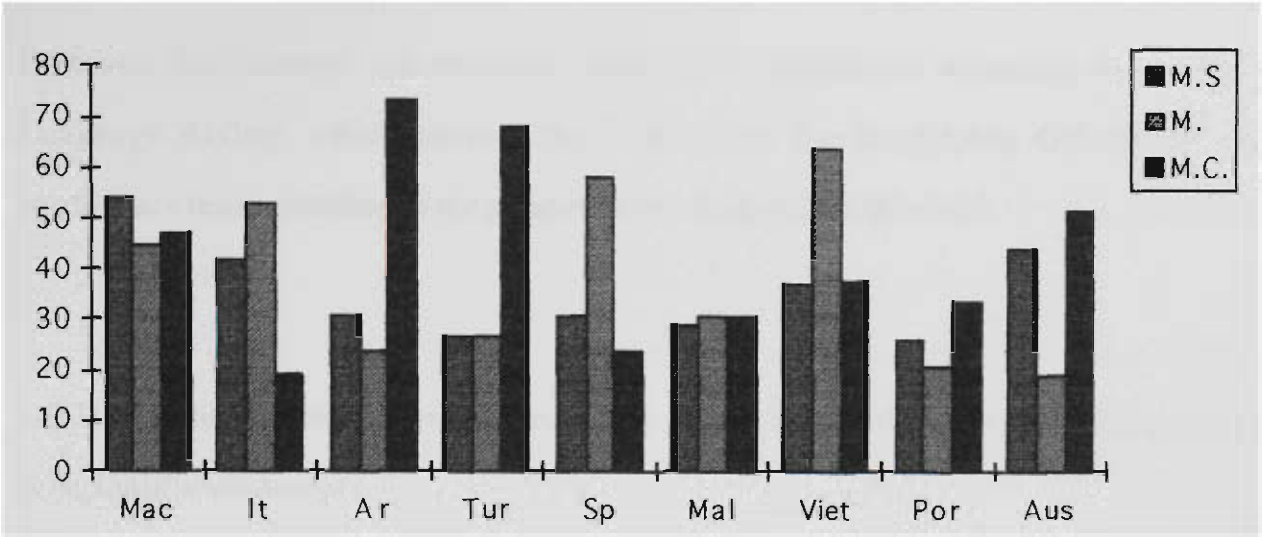


Figure 4.1 (c) Parent responses according to ethnic background: Memory Skills; Motivation; Mathematical Competency.

From analysis according to sites (Figure 4.2) indicators were fairly constant, the marked exceptions being Thinking Skills which was highly regarded by site C (more than half of the responses), and Mathematical Competency higher at sites A and B where many of the families were from Arabic and Turkish backgrounds.

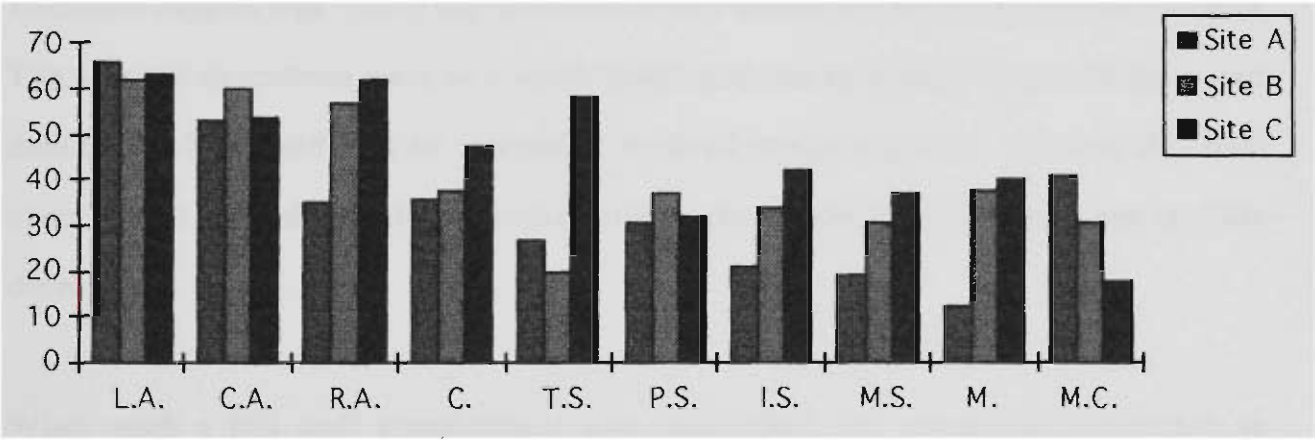


Figure 4.2 Responses according to site.

Key:

L.A. - Language Ability	P.S. - Psychosocial Skills
C.A. - Creativity	I.S. - Interpersonal Skills
R.A. - Reading Ability	M.S. - Memory Skills
C. - Curiosity	M. - Motivation
T.S. - Thinking Skills	M.C. - Mathematical Competency

However, the common and dominant indicator of giftedness according to parents is Language Ability, which mirrors the "Checklists for Identifying Giftedness" and intelligence tests according to the prominent psychologists in this field.

1.2 How is the concept of giftedness within these cultures different from the generally accepted school concept?

Questionnaires were also given to all Staff Members. The concept guiding the research had been thoroughly described and discussed with each school executive staff prior to any site decisions being confirmed. This allowed for clarification by the researcher on all procedural steps but especially to reaffirm commitment to such a concept. If any sign of antagonism towards gifted education - or the term 'potentially gifted' when referring to a child was evident, the school was omitted from consideration.

Executive support was vital to the success of within-school and within-classroom research. The schools' executives were in a much better position to initially approach their staff members, who would also be integrally involved in the research. Without this total commitment for and confidence in the project, the research study would not be fully developed.

When such a full staff commitment was established, the researcher conducted an introductory Staff Development Session at each site where an overview of the project was presented. This allowed open discussion to occur and any misunderstandings or uncertainties to be clarified. The enthusiastic response to these sessions was very gratifying. It also became very obvious that the concept of "giftedness" was very broad - with a few having to be convinced that in our classrooms these children really do exist. At

the conclusion of these sessions, the Staff were also asked to complete a short questionnaire (see Appendix 3).

Because all staff members were present at these sessions, there was 100% response rate. These responses were analysed and coded where necessary to gain:

1) the general concept of giftedness according to all teachers surveyed as indicated in Table 4.2,

2) the concept of giftedness by teachers according to sites, as indicated in Figure 4.3, and

3) a comparison between the constructs of giftedness held by parents and the schools, shown in Figure 4.4.

Advanced Academic Ability was nominated by 82% of staff and General Knowledge by 64%, as the main indicators of giftedness. As entities, these were not considered by parents, who differentiated these concepts into individual traits. However, the remainder of the ten highest scoring attributes were very similarly selected - although the order was quite different. It must be noted that teachers hold academic subject areas (Linguistic and Mathematical Intelligences) as high indicators, while parents agreed with Language abilities but scored mathematics quite low. Teachers expressed "creativity" in the form of "originality and initiative" but included similar examples (puzzles; games; problem-solving activities; constructions).

Table 4.2 Total staff response

Code	Classification of Data	Tally
A.A.	Advanced Academic Ability.	41
G.K.	Excellent General Knowledge; broad interests; extensive knowledge in may areas.	32
L.I.	Linguistic/Verbal Intelligence.	28
M.I.	Mathematical Intelligence.	27

O.I.	Originality/Initiative.	25
M.D.	Highly developed gross/fine motor skills.	23
R.L.	Rapid Learning capacity.	20
M.S.	Advanced Memory Skills.	11
M.	Motivation.	9
C.	Curiosity.	8

Analysis of responses from the three sites (as shown in figure 4.3) highlighted each group's understandings of the concept of giftedness. At two of the sites, it was evident that the teachers viewed the greatest "deficits" of the students as indicators of giftedness, while the third site's teachers were able to respond according to the terms of the questions. For example, the teachers from site A which consisted of an extremely high NESB and low SES population, saw linguistic intelligence, mathematical intelligence and motor development as prominent indicators of giftedness, while teachers form site C which also had a high NESB population, but from a mostly middle class SES, viewed advanced academic achievement and extensive general knowledge quite considerably more than any other factors as indicators. This premise was reinforced when comparing sites A and B which are quite similar demographically.

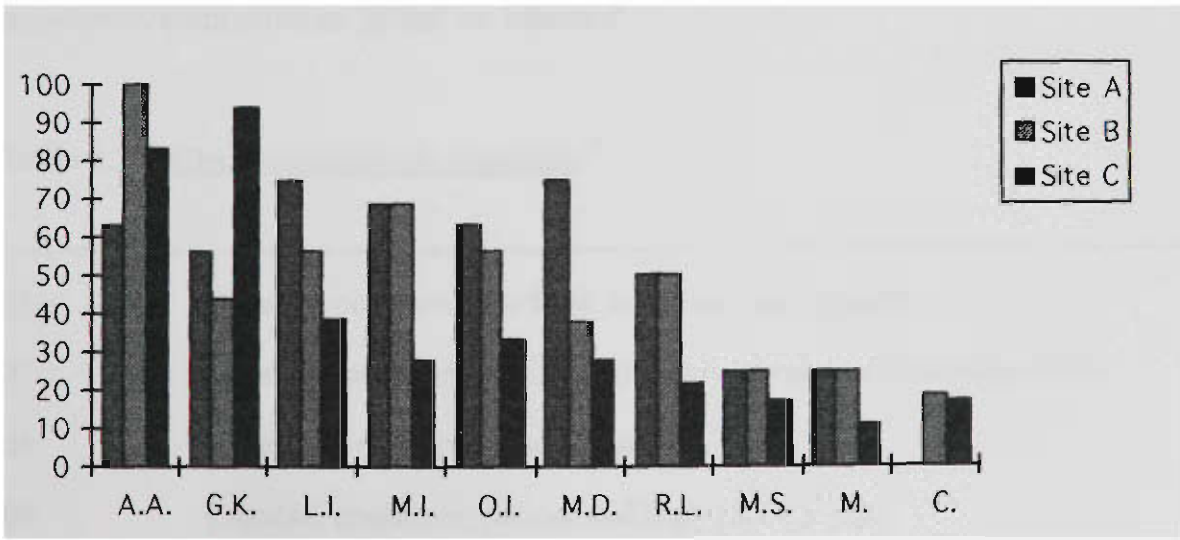


Figure 4.3 Responses of teachers according to sites.

Comparisons made between total parent and total teachers' responses as shown in Figure 4.4 demonstrated that their constructs of giftedness were quite similar - although expressed differently as would be expected. The similar results allowed for the development of a whole-school intervention program that readily included parents as an integral part for its success. Their values and beliefs were very similar to those held by staffs within their school communities.

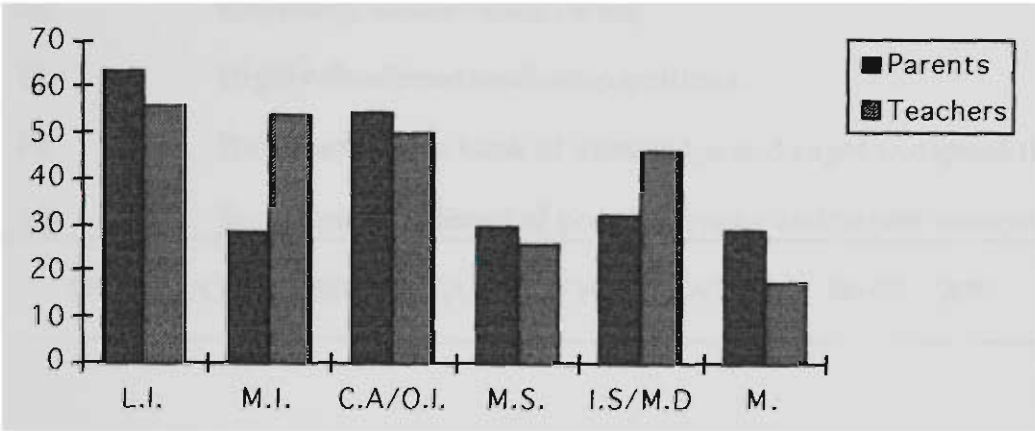


Figure 4.4 Comparison between parent and teacher common responses.

Even though extensive input was given by the researcher at the initial staff and parent meetings, that the terms 'gifted' and 'talented' were being used, within this research, synonymously, it was much more obvious that teachers believed that the terms are different and are realised differently in students, even to the extent of equating percentages of population nominated as 'gifted' or 'talented'.

Table 4.3 Gifted - summary of responses

01:	Gifted in one particular field ie Music; Mathematics; Sport.
02:	Excellent problem-solving and highly developed reasoning skills.
03:	High level of perception and insight.
04:	Capable, confident, patient and highly motivated.
05:	Academic progress and achievement excellent, with the capacity for rapid learning from a very early age.

06:	Very articulate, quick thinking with extensive vocabulary.
07:	Prefers adult company (child).
08:	Enjoys new challenges.
09:	Well-developed enquiring mind.
10:	Creative, expressive mind and artistic temperament.
11:	Excellent, quick sense of humour.
12:	Extremely sensitive and caring.
13:	Highly developed leadership qualities.
14:	Broad, extensive bank of knowledge and eager to expand this.
15:	Sometimes intolerant of poor behaviour and/or performance of others.

NOMINATED PERCENTAGE OF POPULATION: .001% - 20%

Table 4.4 Talented - summary of responses

01:	Ability to carry out tasks well without practice.
02:	Excellent acquisition of languages - English and foreign.
03:	Highly self-motivated and pushes towards greater degree of excellence.
04:	Highly talented in and above average performance at a particular field ie sport, music art, gymnastics.
05:	Displays depth of understanding, logical reasoning, curiosity, intellectual honesty.
06:	Highly competent in a wide range of areas, ie music, sport, academic achievements.
07:	IQ score 140+.
08:	Alert, communicative, able to solve problems easily.
09:	Prefers older company.
10:	Good sense of humour.
11:	Willing to experiment and take risks.

12:	Ability to visualise from 2 to 3-dimensional and vice versa, ie from plan to the finished product / product to plan.
13:	Very creative with highly developed fine-motor skills.
14:	The realisation of talent is dependent on the nurturing of that talent by people and/or environmental factors.
15:	Quickly bored once a challenge is realised.
16:	Requires external challenge to perform at best.
17:	Not always accepted by peers.
18:	Poor everyday common sense.
19:	Not easy to live with.

NOMINATED PERCENTAGE OF POPULATION: 1% - 100%

CONCLUSION

From analysis of all data sources, the results strongly demonstrated that most of the teachers and parents have a good grasp of the concept of giftedness and the behaviours of young children that indicated this potential.

For the teachers a consensus on synonymous usage of the terms 'gifted' and 'talented' will need to be addressed so that a workable, whole-school definition and policy can be established and effectively implemented.

The concept of face-to-face meetings with all participants is recommended for any research of this nature as a very amicable rapport was also established from the outset. This assumption was reinforced by the number of parents who initially enquired about the project, and later contacted the school to find out if any support meetings had been arranged - after only a few weeks from the commencement of the study.

RESEARCH QUESTION 2

What are significant behavioural and performance indicators of early childhood intellectual potential?

2.1 What significant characteristics are nominated by parents as indicating potential giftedness in children?

To gain these data a second Questionnaire was given to the parents of the children who had been selected for the research study (n=52). From the 52 questionnaires distributed, 45 (27 from Kindergarten; 18 from Year 1) were returned. This was an 86.5% response rate, which was very high, again demonstrating a real commitment to the study. Where necessary, these questionnaires were translated into community languages (see Appendix 2). Data from these questionnaires, as shown in Table 4.5, were analysed and compared with Question 3 of the first questionnaire for triangulation.

Table 4.5 Characteristics of giftedness in early childhood nominated by parents

Code	Characteristics	Tally K Y1 Total
F.I.	Follows 2 and 3 step instructions easily and quickly.	19 + 15 = 34
P.C.	Can follow pictures to build objects with blocks (lego etc).	16 + 17 = 33
E.A.	Enjoys new experiences and activities.	12 + 16 = 28
O.A.	Is interested in older children's activities.	9 + 15 = 24
F.Q.	Asks lots of questions "How?" "Why?" etc.	23 + 16 = 39
O.C.	Prefers to be with and talk with older children/adults.	14 + 14 = 28
T.V.	Likes to copy sporting people that they see on television.	15 + 11 = 26
P.	Enjoys performing for an audience.	13 + 9 = 22
S.R.	Can read simple stories in Home Language.	21 + 16 = 37
D.A.	Demands attention for their achievements.	14 + 9 = 23
M.A.	Enjoys listening to, and joining in musical activities.	9 + 15 = 24
G.O.	Can organise friends into a game.	17 + 13 = 30
I.P.	Uses imagination to play when by themselves.	19 + 16 = 36

S.T.	Enjoys making up stories about their own pictures.	21 + 14 = 35
L.P.	Likes time to play by themselves.	9 + 13 = 22
M.S.	Can accurately tell about something that has happened - even long ago.	17 + 15 = 32
C.S.	Can concentrate on one activity longer than other children.	20 + 14 = 34
L.S.	Is usually chosen as a leader by other children.	12 + 11 = 23
C.M.	Often corrects older children/adults when they think a mistake has been made.	9 + 16 = 25
S.H.	Has a good sense of humour.	13 + 14 = 27
L.Q.	Always wants to be in charge of any activity.	17 + 17 = 34

Curiosity was noted as the most common indicator of giftedness with a response of 87%. This response was closely supported by reading skills (82%) and imagination (creativity coded as IP - 82%, and ST - 78%). The ability to follow instructions, verbal (FI) and picture (PC) were also note as high indicators of giftedness (76% and 73%), as was concentration (CS - 76%). 'Leadership' produced a strange response. Although the child saw himself/herself as a leader (LQ - 76%) other children did not (LS - 51%).

Responses were stronger and more uniform for all questions from the parents of Year 1 children than from the parents of children in Kindergarten. A probable reason for this difference was due to the fact that the children from Kindergarten were randomly selected for the study (with additions of children where deemed as special inclusions (n = 3) because the teachers felt that they were displaying gifted behaviours, while the Year 1 children were selected using multiple non-traditional and traditional criteria (see Figure 3.2). This strength of responses can be interpreted from Figure 4.5 where the ten highest responses are compared by percentages.

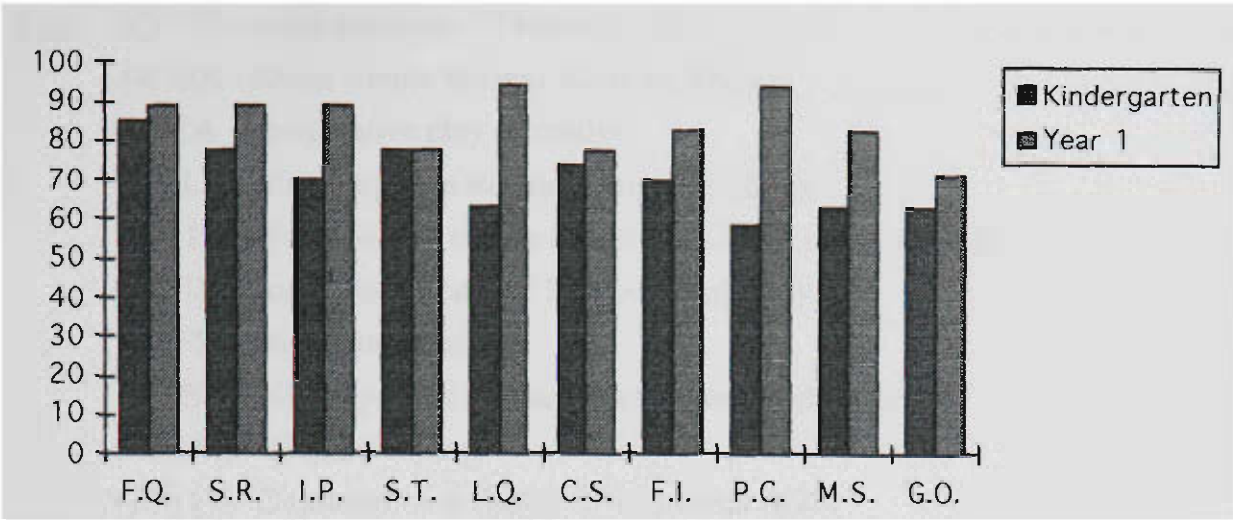


Figure 4.5 Comparison percentage of responses from parents of children in Kindergarten and Year 1.

Key:

FQ - Asks lots of questions	CS - Good concentration
SR - Reads simple stories in home language	FI - Follows instructions
IP - Imaginative play	PC - Follows picture instructions
ST - Makes up own stories	MS - Good memory
LQ - Wants to take charge of activities	GO - Organisational skills

The responses of all parents in Parent Questionnaire 2 was further compared with the responses of all parents in Parent Questionnaire 1 - question 3 for triangulation of data, as shown in Figure 4.6.

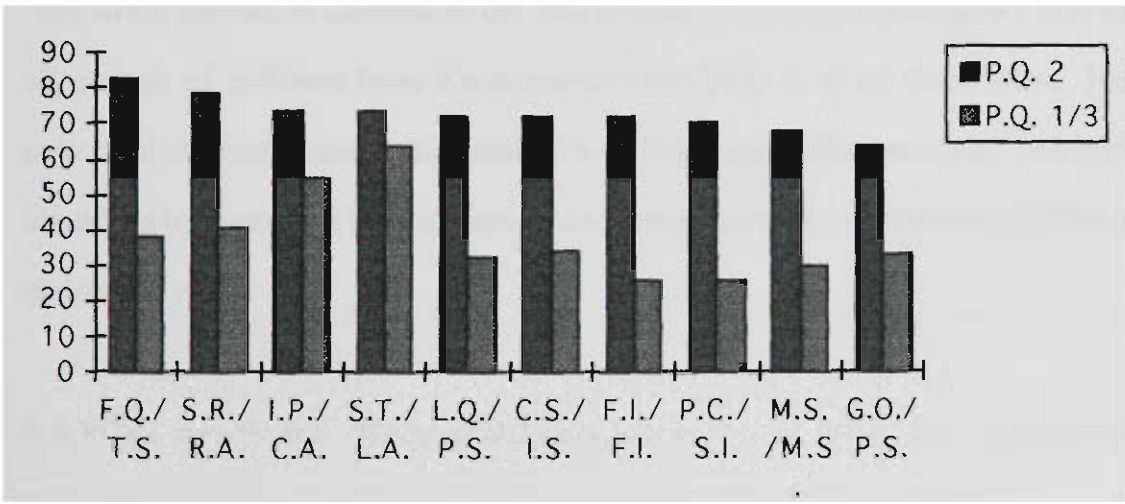


Figure 4.6 Comparison data of parent questionnaire 2 and question 3 of parent questionnaire 1.

Key: FQ / TS - Asks questions / Thinking skills
SR /RA - Reads simple stories / Reading Ability
IP / CA - Imaginative play / Creative
ST / LA - Makes up own stories / Language ability
LQ / PS - Wants to take charge of activities / Psychosocial skills
CS / IS - Good concentration / Interpersonal skills
FI / FI - Follows instructions
PC / SI - Follows picture instructions / Spatial intelligence
MS / MS - Good memory
GO / PS - Organisational skills / Psychosocial skills

The spread of responses was much greater in Questionnaire 1. One explanation for this would be in the nature of the Questionnaire format. Questionnaire 2 consisted of a set of closed questions (yes / no response) and therefore researcher directed to some extent, while Questionnaire 1 was open-ended and allowed for individual ideas. Some of these responses were very comprehensive while others stated only one or two characteristics. The importance placed on language ability was almost as highly ranked in Questionnaire 1 (65%) as it was in Questionnaire 2 (78%). Creativity was also strongly nominated in both sets of responses (54% and 80% respectively).

These results can also be explained by the fact that Parent Questionnaire 2 was distributed only to the parents of children in the study, while Parent Questionnaire 1 was distributed to all parents of children from Kindergarten and Year 1, at all three sites. However, the pattern of the responses is still similar with language skills, creativity and curiosity being identified by parents as both indicators and behavioural characteristics of giftedness in early childhood years.

2.2 What significant characteristics do teachers and specialist teachers nominate as indicating potential giftedness in children during early childhood years?

Data were gained from the analysis of Question 2 of the Teachers' and Specialist Teachers' Questionnaires: Please rank the following characteristics 1 - 9 (1 highest, to 9 lowest) as

they pertain to academically gifted children: Large vocabulary; Original Ideas / Shows Initiative; Long Attention Span / Good Memory / Retentive; Curiosity; Makes Relationships / Widely Informed; Keen Observational Skills; Rapid Learning Capacity; Task Commitment/ Motivation; Productive / Critical Thinking. Data were also obtained from analysis of Questions 6 and 7 from the Saturday Schools' Teachers' Interview Schedules : What do you see as characteristics of bright children? and How are you able to identify a young (<6 / 7 years) gifted child? This information is represented in Table 4.6.

Table 4.6 Ranking staffs' responses of giftedness

Ranking:	1	2	3	4	5	6	7	8	9
Behaviour									
1	1	1	0	3	5	4	10	12	14
2	3	4	12	10	10	5	2	2	2
3	4	2	3	4	5	13	7	4	8
4	9	4	2	12	4	6	5	0	8
5	2	2	4	2	4	4	5	9	18
6	2	9	11	4	0	6	10	8	0
7	20	9	6	7	4	0	0	4	0
8	2	4	6	6	11	6	7	12	2
9	6	12	9	6	6	7	2	2	0

The rankings of characteristics in Table 4.6 were in many instances contradictory to the responses from the same teachers as shown in Table 4.2. In ranking the characteristics, 84% of the staff placed R.L.C. (Rapid Learning Capacity - No 7) at 4 or above (very high), yet when asked to specify giftedness only 40% nominated this factor. Similarly, 54% ranked C. (Curiosity - No 4) as high, while, as a characteristic of giftedness, only 16% nominated it. Linguistic Skills (No 1) was nominated by 56% as showing giftedness, but was ranked by 80% of teachers as very low (in the 6 - 9 ranking). There was some

agreement, however, with factors such as Originality and Initiative (No 2) which was nominated at 58% and 50% respectively, and the Task Commitment / Motivation (No 8) was nominated by 24% in Table 4.6 and 18% in Table 4.2. This analysis is further illustrated in Figure 4.7

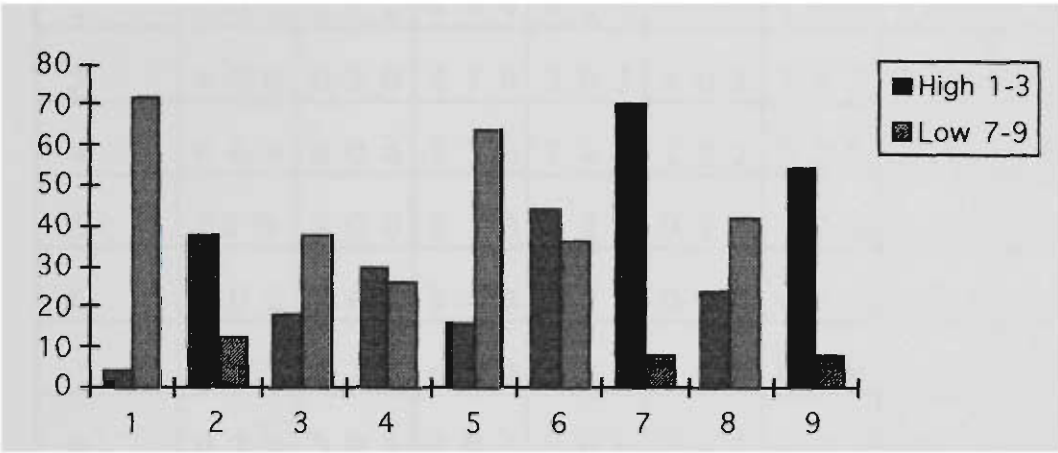


Figure 4.7 Total responses of teachers according to high (1-3) or low (7-9) ranking.

The dominant high responses were recorded for Rapid Learning Capacity (No 7) and Productive / Critical Thinking (No 9), while emphatically recorded as low indicators were Large Vocabulary (No 1), Makes Relationships / Widely Informed (No 5) and Task Commitment / Motivation (No 8). It is interesting to note that Keen Observation Skills (No 6) was almost equally divided between high and low responses.

Data analysis from the Teachers' Questionnaire, Question 2, was also compared across sites in Table 4.7. This information was an essential part of the development of each school's policy for gifted education.

Table 4.7 Characteristics of gifted behaviour ranked by teachers according to sites.

Ranking:	1	2	3	4	5	6	7	8	9
Behaviours									
1	0 0 2	0 0 0	0 0 0	1 2 0	3 1 1	2 2 0	2 4 4	7 4 1	6 0 8
2	1 0 2	1 1 2	4 4 4	4 2 4	4 2 4	2 3 0	1 0 1	1 1 0	2 0 0
3	4 0 0	0 2 0	2 1 0	2 0 2	3 0 2	2 4 7	5 1 1	0 2 2	0 5 3
4	6 0 3	0 0 4	1 2 0	7 4 1	2 0 2	2 2 2	2 0 3	0 0 0	3 5 0
5	2 0 0	2 0 0	2 2 0	0 2 0	0 2 2	2 2 0	0 3 2	3 0 6	10 2 6
6	0 0 2	3 4 2	3 4 4	2 0 2	0 0 0	4 0 2	4 4 2	4 2 2	0 0 0
7	5 12 3	3 2 4	6 0 0	2 0 5	1 0 3	0 0 0	0 0 0	0 1 3	0 0 0
8	0 2 0	3 0 1	4 0 2	0 0 0	5 4 2	4 0 2	0 2 5	6 3 3	2 0 0
9	4 0 2	5 5 2	2 3 6	2 4 0	2 2 2	5 0 2	2 0 0	0 2 0	0 0 0
Sites	A B C	A B C	A B C	A B C	A B C	A B C	A B C	A B C	A B C

When data were analysed according to site, the results showed very little difference from the total response (Table 4.6). Notable differences occurred in the ranking of Statement 4, where 88% of site A teachers ranked it very high compared with 38% from site B and 44% from site C. 100% of staff from site A considered Statement 7 as a high indicator (ranked 1 - 4) and 75% of site B teachers ranked it as the highest indicator (1), while 66% from site C also ranked it high (1 - 4). All statements were seen as being equally relevant as indicating giftedness by the staff from site C except for Statement 1, which was ranked very low by all sites and Statement 5, where 78% ranked it very low (7 - 9). However, because there emerged general consensus of the construct of giftedness from the teachers at all sites, a Staff Development Plan that would meet the needs of all three sites could be effectively constructed (see Appendix 8).

Data from teacher informal interviews and discussions, with the more formal Saturday Schools' Teachers' Interviews, were also analysed periodically to give an extra dimension to the understandings of, and attitudes towards, giftedness as held by all teachers.

Data were also obtained from analysis of Questions 6 and 7 from the Saturday Schools' Teachers' Interview Schedules: What do you see as characteristics of bright children/ and How are you able to identify a young (< 6 / 7 years) gifted child? Data analysis of the Saturday Schools' Teachers' Interviews (Questions 6, 7 and 9) is depicted in Figure 4.8.

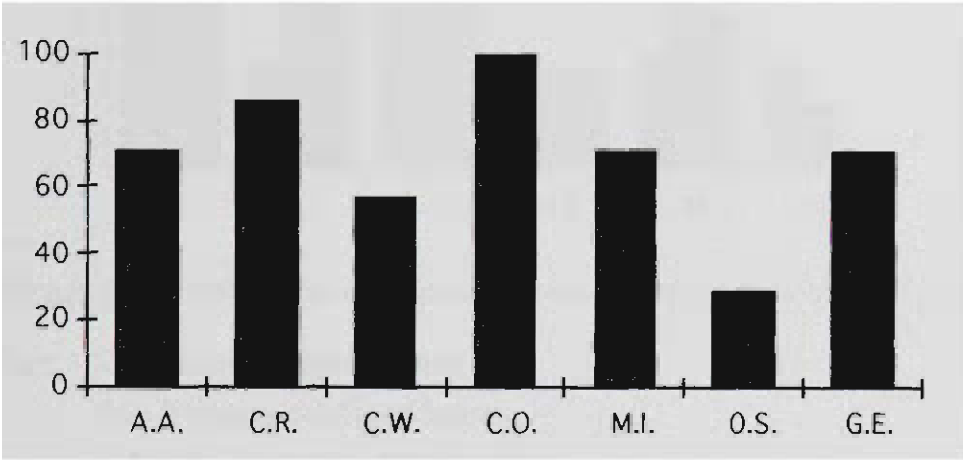


Figure 4.8 Responses from Saturday School teachers' interviews.

Key: AA - Advanced academic ability
CR - Reading competency
CW - Writing competency
CO - Oral competency
MI - Mathematical intelligence
OS - Good observation skills
GE - General early development

In all but two of the categories of giftedness nominated by the Saturday School teachers, five or more of the seven teachers interviewed, agreed with classroom teachers on the characteristics indicating giftedness in young children. Two very noticeable omissions from the Saturday School teachers' nominations were those of creativity and curiosity. This could possibly be accounted for by the short amount of time (3 - 4 hours per week) that they actually have with the children in class, often a very large group, > 30. However, data analysis of Question 9 : Are children sometimes gifted in more than one area? revealed that the majority, (71%) of the teachers, included artistic, dance and music talents. The emphasis on Language and Mathematics is a result of what they feel are the essentials

for educational and lifetime success in the children they teach. The language skills, more specifically nominated by these teachers as Reading, Writing and Oral Competency, were very highly ranked - 6/7, 4/7 and 7/7 respectively. These results also correlate with the parents' and classroom teachers' responses, and are shown in Figure 4.9.

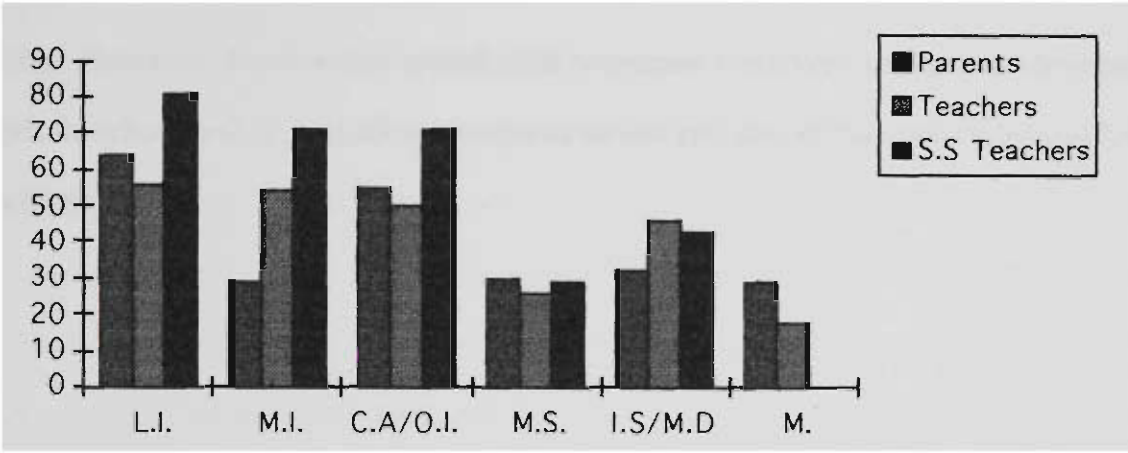


Figure 4.9 Comparison of responses from parents, teachers and Saturday School teachers.

Key: LI - Linguistic intelligence
MI - Mathematical intelligence
CA / OI - Creativity / Originality
MS - Memory skills
IS / MD - Interpersonal skills / Motor development
M - Motivation

CONCLUSION

Interviews proved to be the most efficient data gathering process of information from Saturday School teachers. Two of them (Arabic and Turkish) required clarification of some questions. This was done immediately by ethnic aides and avoided any misunderstandings or incorrect /irrelevant data being supplied.

Although expressed differently in some instances, the behavioural and performance indicators of giftedness in young children nominated by parents and all teachers were not only uniform but also in very similar proportions.

The noticeable omission from the parents' response was that of advanced Academic Ability which is made by teachers on a comparative (whole class or wider audience) basis, while parents are simply making judgements using their own child / children as a reference.

These responses were also substantiated by researcher's field notes from classroom / playground observations and document examination and assessment of children in the study. However, because the overall total responses were very similar, the development of a whole school policy, including parents as an integral part of this policy, would be readily facilitated.

RESEARCH QUESTION 3

What is the nature of the home environment of these potentially gifted students?

3.1 What home activities does the child enjoy?

3.2 What activities within the home are conducive to the development of giftedness?

3.3 What assistance is given to the child by older siblings?

3.4 How well does the child interact with other family members, friends and other adults?

3.5 Is there any sibling resentment of the potentially gifted child?

All parents, mostly the mothers, but in some instances both parents (3 out of 52), of the children in the research study were interviewed at a time and place most convenient to them. All parents requested to come to the school during school hours, but because of employment commitments, five made out of school hours appointments.

Data from these Parent Interviews (see Appendix 4) were analysed to gain more specific individual information. This information was compared with the data from the general responses of Parent Questionnaire 2 and commonalities noted.

These interviews were also audiotaped (with permission) to ensure that nothing relevant was omitted or incorrectly documented by the researcher. Surprisingly, Mathematical Intelligence scored highest (92%) of the parent responses in the interview format. Curiosity again was specified by 88%, which was similar to the response of Questionnaire 2 (see Table 4.5, Code FQ). Linguistic Ability was subdivided in their responses to Early Speech / Love of Books, and again were considerd as high indicators of giftedness (ES - 71% and LB - 92%). Creativity was expressed in a variety of forms, for example creative play; imaginative; story-telling; inventing games, puzzles, playmates etc, and again highly ranked (65%). The interview added a much deeper perspective of each child, which was recorded in the individual total pupil profiles (see Table 4.27), especially in the areas of spatial and artistic, musical, bodily kinaesthetic and intrapersonal intelligences. A summary of these data are recorded in Table 4.8.

Table 4.8 Responses from parent interviews.

Code	Classification of Data	Tally
E.S.	Early Speech - words; phrases; conversations.	37
E.W.	Early Walking.	24
L.S.	Limited amount of sleep - spasmodic sleep patterns; resists bedtime.	29
L.B.	Love of Books; pretending to read; inventing stories; listening to stories read.	48
T.V.	Interest in TV programs - many ABC programs for school age children; copying people (actors, sporting identities, entertainers); knows time and days for particular programs.	45
I.S.	Interpersonal Skills - mixes well; likes playing; enjoys older children's / adult company; manipulates peers / siblings.	39
M.I.	Mathematical Intelligence - counting; matching; shopping; basic computations; time; basic understanding of money values.	49

G.C.	Good Co-ordination - hand/eye; foot/eye; fine motor skills; body movements.	21
A.A.	Artistic Ability - colouring; drawing; sculpture (play dough);	33
S.I.	Spatial Intelligence - 3D models; perspective in drawings; construction toys.	27
M.A.	Music Ability - songs from radio / TV; nursery rhymes and jingles; piano notes.	19
G.K.	General Knowledge - wide range of interests; links information.	32
C.	Curiosity - asks a lot of questions; not always satisfied with response.	46
C.L.	Computer Literacy - computer games; basic keyboard skills.	21
L.	Leadership - likes to be in charge of games; initiates play.	36
C.P.	Creative Play - good imagination; invents playmates; changes known stories to suit the occasion; invents simple games; enjoys puzzles.	34

This information from interviews was reinforced by the data obtained from Parent Questionnaire 2, where curiosity, linguistic intelligence, imaginative play, creativity, spatial intelligence and memory skills / general knowledge were also highly valued (see Figure 4.10). However, significantly greater amounts of personal data which were used to assist the later development of individual profiles, were obtained from the interview situation.

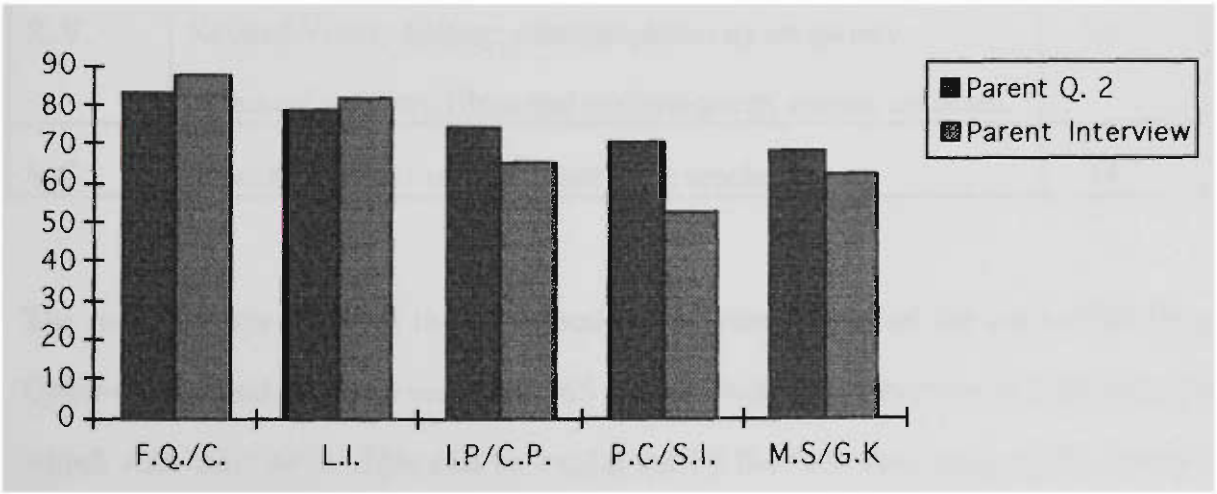


Figure 4.10 Comparison of responses from parent questionnaire 2 and parent interview

Key: FQ - Frequent questions / Curiosity

LI - Linguistic intelligence
IP / CP - Imaginative play / Creative play
PC / SI - Picture instructions / Spatial intelligence
MS / GK - Memory / General knowledge

There was only a negligible number of responses for what the child 'disliked'. These responses mainly concerned general home routines, such as bed times, household chores and reward and punishment schemes. It was also obvious from this analysis that in 100% of responses, parents and siblings were willing to assist the child academically in any way possible. These responses are represented in Table 4.9.

Table 4.9 Responses of home assistance conducive to gifted behaviour.

Code	Classification of Data	Tally
A.R.	Adult / older sibling reading to /with child; hearing child read.	49
C.L.	Computer literacy - developing skills; teaching use of advanced equipment eg CD ROM; engaging in computer games.	21
H.A.	Homework Assistance - from parents / older siblings / extended family members.	52
R.V.	Related Visits - library; relevant places eg art gallery; botanical gardens; films and performances; circus; museum.	41
S.C.	School Contact - regular input from teacher/s.	34

The response rate to all of these methods of academic support for each child (Research Questions 3.2 and 3.3) was very high (65 - 100%) with the exception of Computer Literacy which was only 40%. This can be explained by the fact that many of the lower socio-economic homes do not have their own computer systems. Another interesting item from

the interview was the extremely high ranking of Mathematical Intelligence (94%) which was erroneously omitted from the questionnaire.

To establish validity of parent responses for research questions 3.4 and 3.5, researcher observations of classroom and playground activities, as well as discussions with teachers were considered.

Most parents (91%) indicated that the child was well adjusted and happy. He / she was popular with family members, peers and teachers. However, from analysis of field notes (researcher classroom / playground observations and researcher / teacher discussions) it became obvious that several (11.5%) of the children were regularly omitted by peers from playground games or classroom group work. Three of the children (5.7%) were very difficult children especially in the playground, and also demonstrated disruptive classroom behaviour. Two of these children were Arabic females who usually assume a very subordinate role within the family. This would account for the discrepancy between the parent responses and researcher / teacher descriptions.

CONCLUSION

To determine characteristics of the home environment, particularly activities that were conducive to the development of giftedness proved to be quite a challenging process. Fortunately, because of the initial rapport established between researcher and parents, they were willing to openly discuss their children both as individuals and as part of the family unit.

Except for observable traits that appeared in the classroom and playground situations, the validity of parent responses had to be accepted. In only three out of fifty-two instances did parents state that the child was "difficult and unco-operative" at home. Playground and classroom data suggested that a further three children regularly displayed antisocial behaviours. Of these six children, four were from Kindergarten's random sampling, and

two of them (6.5%) were found to have some quite recognisable learning difficulties that would receive immediate attention. Further detailed explanation is included in analysis of Research Question 6.

In total, six out of fifty-two (11.5%) of children in the sample displaying any antisocial behaviour pattern, was a pleasingly low result. This suggested that, although identified as gifted, these children were happy, well adjusted with high self-esteem. Only 9.5% of Year 1 children were included as not well adjusted - and these behaviours occurred infrequently.

Analysis also demonstrated that there was no sibling rivalry, and in fact older brothers and sisters were very supportive and proud of the younger children's achievements. This was reinforced from observation of occasional playground interactions.

The most noticeable difference among responses concerned home activities, in particular Related Visits. While all parents indicated that 'homework assistance' was given, only one of the Moslem families indicated that they took their children to places of interest. The one issue that raised concern was that of school contact which was also surprisingly low, (65%), for children who are in their first year/s. This is possibly explained by the fact that many of the parents felt 'educationally inadequate' when passing reference was made to their own educational backgrounds.

With the development of a whole school policy that includes and values parental input, greater and essential parent / school interaction and strategic planning for each child, not only those identified as gifted, will be achieved.

RESEARCH QUESTION 4

Are values or other personal conflicts (such as competition or achieving at the expense of others) between the school culture and the home culture affecting the identification of gifted NESB, Aboriginal or Low SES children in early childhood years?

These data were a lot more difficult to obtain than had been anticipated. From analysis of Parent Questionnaire 1, responses such as "All children are smart in some way." (6.1%) for Question 1; "Don't know." (2%) for all three questions; no response at all (1.3%); for one or all questions; "Nothing out of the ordinary." (2%) for Question 2 and "Nothing. A normal little child." (6.8%) for Question 2, were the only negative responses.

However, one response insisting that "Parents should not compare their child with other children to avoid disappointment with their own child's capabilities" was also insinuated in some responses (6%) from Staff who were obviously opposed to the notion of 'giftedness'.

From discussions with Staff it was stated that with the Aboriginal children, identifying them as gifted in the early years (<7) was acceptable, but into the primary school years and beyond, the children themselves refused any such label, and even became non-participants. However, from interviews with Aboriginal parents, it was emphasised that every encouragement was given to the children to excel in any area of potential giftedness - particularly in the Creative and Bodily-Kinaesthetic areas (art, music, dance, story-telling and sport).

Similarly, with some of the other cultural groups, particularly Arabic and Turkish, there was an obvious difference between responses from parents (Parent Interviews) and researcher observations / teacher comments. While parents insisted that a child was given all assistance and encouragement to reach his / her full academic potential, it was obvious that there was a gender bias towards the males in a family. Girls did not demonstrate

greater academic strengths than older brothers in the group / class situation. This made valid selection of Year 1 children for the research study very difficult for teachers who were making identification decisions partly on the display of overt characteristics. This cultural trait is further compounded by some teachers' lack of perception and cultural knowledge, an essential part of the "Staff Development Plan". (Appendix 8). The ethnic background of children selected for sample from Year 1 is demonstrated in Figure 4.11.

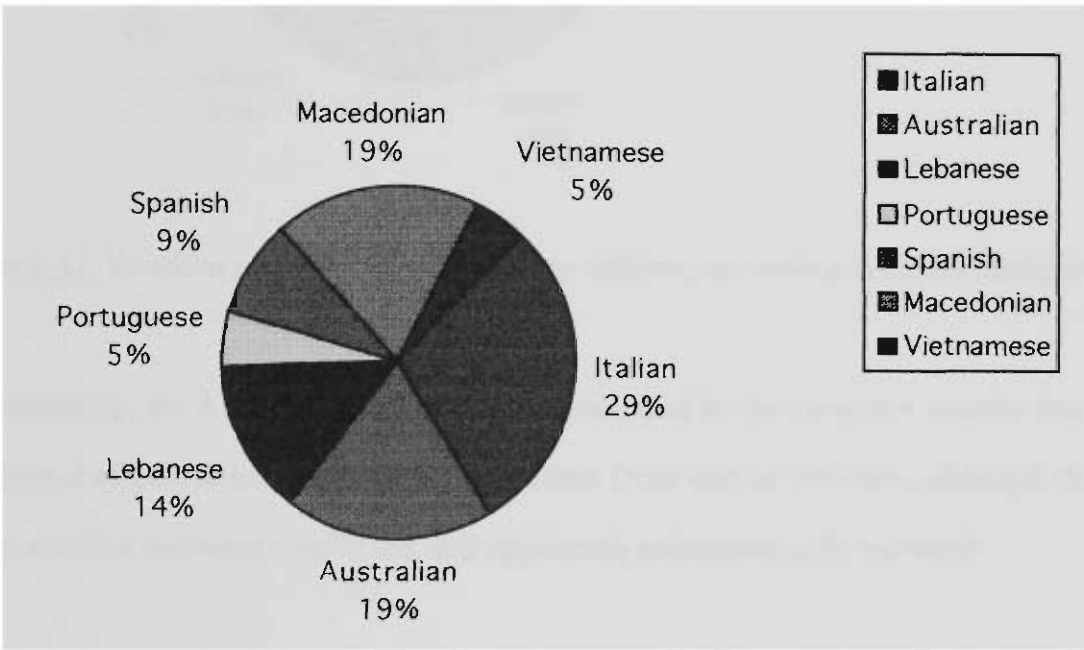


Figure 4.11 Ethnic backgrounds of Year 1 children in research sample.

Only 3 out of 21 children from Year 1 included in the research sample were from Lebanese background, while no Turkish children were selected. Conversely, due to random sampling of the Kindergarten children, a much wider demographic picture was obtained, as pictured in Figure 4.12.

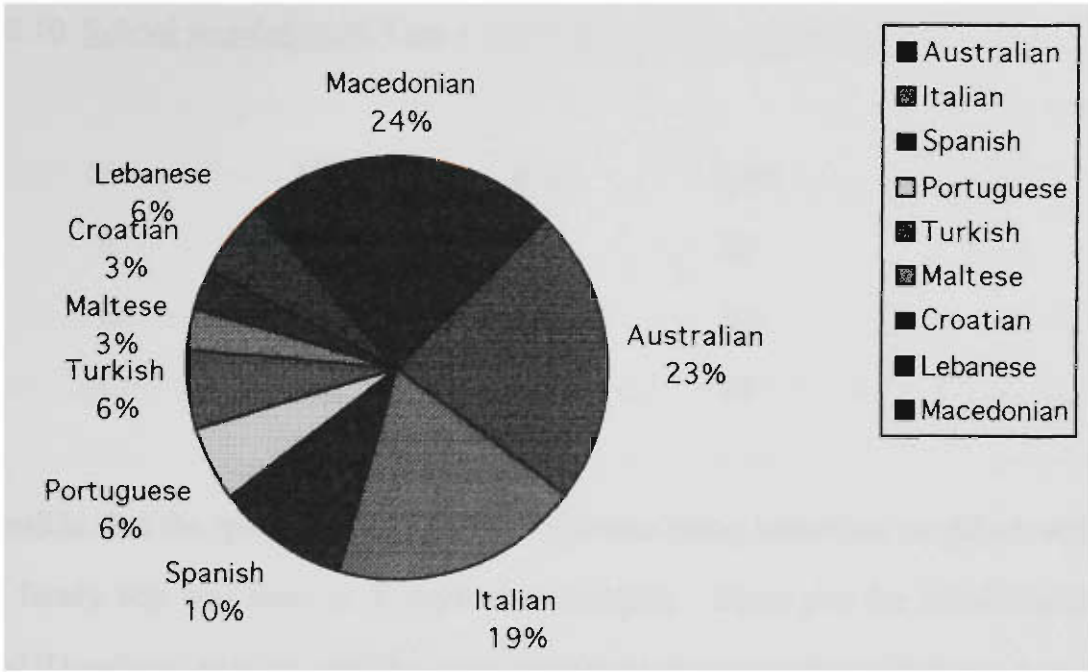


Figure 4.12 Random selection of kindergarten children according to ethnic background.

Unfortunately, no Aboriginal children were included in the research sample because of withdrawal of permission, due to staff concerns from one of the sites, although the initial parent meeting had been conducted, and apparently enthusiastically received.

The children selected from Year 1 for the research sample did not mirror the proportions of the various cultural groups within each school. This was particularly evident with the number of Moslem girls who were included (4.8%), when the Lebanese children make up 29% of Year 1 at Site A and 17% at Site B, Site A had the only Turkish children in Year 1, and these constituted 18% of the class.

Another concern with the Year 1 selection of children was the gender bias, where girls outnumbered boys 2 to 1. This was not consistent with Year numbers which were almost identical for boys and girls at all three sites (see Table 4.10). As Kindergarten children were randomly selected, gender difference and ethnic origin were not an issue.

Table 4.10 School population of Year 1 students according to gender.

Site	Girls	Boys	Total
A	34	29	63
B	17	15	32
C	13	16	29

It is possible that the quiet, 'teacher-pleaser' girl was being identified as gifted, while the louder, lively boy was seen as disruptive or naughty. Strategies for identification are essential if teachers are to be confident and competent at recognising giftedness in a variety of forms in the very young and diverse groups of children. Indicators represented as a 'Combined Site Developed Checklist' (Carnellor, 1996) to enhance accurate identification are included in the Staff Development Package (see Appendix 8).

To ensure that potentially gifted children from minority groups will attain their full educational potential, and where available, have equal access to special programs, it is essential that teachers have a complete understanding of the cultural backgrounds of these children. Lack of knowledge on the part of the school will result in continuous errors in judgement and predictions made by teachers. Many children will be unconsciously omitted from special programs within the classroom, the school or even the system.

The wrongly-formed assumptions may even lead to a child being incorrectly 'labelled' or placed within the system. This could be as an underachiever or even worse as a 'slow learner'.

The greater the understanding and interaction between family and school, the more accurate the academic decisions made, will be. Teachers in a school which has a high proportion of society's minority groups, must be well informed on all cultural issues that will impact on the effective education of their clientele. They must be aware of any mores that may inhibit

a child from displaying his / her full potential. They must be able to put into place effective classroom strategies that will overcome these educational disadvantages, so that the child will achieve equity of opportunity with his / her Anglo, middle-class counterparts.

These goals can only be achieved through an effective whole-school development plan which includes teachers and parents alike - where one learns from the other so that jointly they can develop an educational plan that will enable the gifted early childhood youngster from an NESB, Aboriginal or low SES background, to reach his / her full potential, and benefit our future society.

For the schools participating in the research study, such a plan has been developed (Appendix 8) which will act only as a 'springboard' for each site. This plan must then be evaluated and modified regularly as staff and school populations change and new challenges are faced from year to year.

RESEARCH QUESTION 5

Are teachers' perceptions of gifted students affecting nominations of students into gifted programs?

5.1 Do teachers see a need for special programs for gifted children?

Only the teachers directly involved in the research study, that is those who taught the classes from which the children were drawn and one class-free specialist teacher (n = 12), were interviewed. Analysis of these data provided more comprehensive information concerning individual / personal perceptions of giftedness and the way they related to gifted students. Although earlier staff meetings and discussions had emphasised the interchangeable use of 'gifted' and 'talented' it was still evident that teachers were differentiating between the terms 'giftedness' and 'talent', however, in their responses the terms were very noticeably interchanged or used synonymously pertaining more to the

'Starfish Mesh' Model of Tannenbaum or the 'Interlocking Circles' of Renzulli. However, all the Ability Domains (Intellectual, Creative, Socio-Emotional, Sensori-Motor) of Gagné's Model with some reference to Gardner's Musical, Artistic, Interpersonal and Intrapersonal Intelligences, were included as characteristics of giftedness.

Giftedness was regularly associated with school achievement (03, 10, 12) while talent referred to other accomplishments (09, 10, 13). Giftedness, as proposed by the psychometric view of intelligence was regularly referred to as 'innate' (01, 02, 04, 05, 12, 15), while talent is developed or learned over time (02, 11, 15, 16). An explanation of their responses towards the concept of giftedness was collated and shown in Table 4.11.

Table 4.11 Teachers' explanations of giftedness (talent) as displayed by children (n=50).

01	You are born with gift in a certain area but can have many talents.
02	Born with ability but worked, probably with gift to become exceptional (talented).
03	Gifted is a natural ability allowing the child to comprehend quickly and easily within a certain field and not dependent on outside stimuli, while talented is much more common, can be extended through learning experiences but will diminish if not nurtured.
04	Gifted is through inheritance while training is necessary to foster and nurture talent.
05	5% of population are born 'gifted' but innate gift must be developed, refined, encouraged, directed towards a specific goal by many people and environmental factors.
06	Gifted is extremely talented and many might be talented, but it is rarer to be gifted.
07	Gifted is 'general' - in all areas but talent is in a particular area.
08	Have a gift at childhood in certain areas, but talent is acquired over years.

09	Gifted excel at a very high level in all areas, while talented show high performance in one area only.
10	Gifted is the capacity for abstract thought and deduction with high academic achievement , while talent is related to skills, mainly physical ie art, cultural activities, sport; not necessarily a high academic achiever.
11	Gifted is innate, and talent is learnt. Most people are good at what they have learnt so 70% of population would be talented.
12	Gifted have overall higher intelligence and ability, while talented show a flair, superiority or expertise in a certain field ie music, athletics.
13	Gifted do not need to be intellectually 'talented', while talented covers a wide range of attributes.
14	Gifted are more socially accepted and highly honoured because of the focus on their ability, while talented are more multi-skilled and high achievers in most areas.
15	The terms can be interchanged, but mostly a gift is what you are born with and talents can be developed and/or extended with exposure to external influences.
16	I don't know any gifted, but talented show aptitude or flair in a particular area and are particularly better than the 'normal person' at doing things.

Sociodemographic data were also analysed to establish teachers' self- perception of teaching confidence particularly in the area of gifted education. With the exception of one teacher (Kindergarten Site C) all teachers had been in the service more than 10 years (>20 years for the male staff). All teachers indicated that they had received no training or inservicing in gifted education to this point in time, which supports studies by Start (1985; 1990) and Whitton (1995). Most of these teachers (75%) also indicated that they felt that there was a need for special provisions for these children, and would be willing to participate in training sessions. This is illustrated in Table 4.12.

Table 4.12 Sociodemographic data of the classroom teachers of children in the research sample (n=12).

AGE (av)			
Male	39.1 years		
Female	35.2 years		
TEACHING (av.)			
Male	23.7 years		
Female	12.8 years		
TRAINING - SPECIAL EDUCATION (av)		TRAINING - GIFTED EDUCATION (av)	
Male	0.5 years	Male	0
Female	2.5 years	Female	0
NEED FOR SPECIAL PROGRAMS FOR GIFTED			
	YES	NO	
Male	67%	33%	
Female	73%	27%	
WILLINGNESS TO PARTICIPATE IN TRAINING COURSES			
IN SCHOOL HOURS		OUT OF SCHOOL HOURS	
Male	100%	Male	67%
Female	100%	Female	55%

The response of 83% of the interviewed staff identified the need for special training in the field of giftedness. However, only 75% of these staff members stated a willingness to be involved in out-of-school hours, university-provided courses or departmental arranged in-service. They did, though, indicate that they believed that it should be a compulsory module of the University's Bachelor of Education, Teacher Training Program.

5.2 How do teachers make instructional decisions for potentially gifted children in their classes?

Data analysis of Question 5 of the Teacher Questionnaire was used as the main source (and sustantiated by researcher's classroom observation and document examination) of teachers crucially involved in the research study to obtain classroom instructional information. Although extension work, individual research and creative activities were the most common responses used for classroom instruction of gifted children, these were not strongly supported by use of curriculum differentiation, so it is assumed that in most instances these activities resembled "more of the same". This is further supported by the very low responses for using Bloom's Taxonomy, accelerated programs, withdrawal time or inter-grade exchanges. This is recorded in Table 4.13.

Table 4.13 Teachers' responses to implementation of classroom strategies for gifted students. (n=50).

Code	Classification of Data	Tally
E.W.	Extension Work at more difficult level; activity sheets; extension groups; extra activities; using higher grade text; mentors; extra curricula activities; games.	31
R.	Individual Research; Motivating tasks.	33
P.S.	Problem Solving activities; Open-ended problems.	27
S.A.	Spatial Activities - construction activities (Lego, Dacta)	8
C.A.	Creative Activities in language, science mathematics, etc. Creative / Lateral Thinking skills; divergent thinking.	31
C.L.	Computer Literacy - developing skills; educational challenges.	8

L.S.	Linguistic Skills - oracy (debate; public speaking; work presentations); extensive reading materials.	14
S.E.	Self-evaluation skills - compare ongoing performance with previous achievements.	1
D.C.	Using differentiated curricula; Bloom's Taxonomy.	2
E.	Excursions; visits; (museums, art galleries, performing arts, science centre).	7
W.T.	Some withdrawal time; inter-grade exchanges.	6
A.P.	Accelerated Programs.	2
A.S.	Additional Staff / resources.	2

The very high responses of extension work - enrichment (74%), research (66%), creative activities (62%) and problem solving (54%) would enable each school to effectively implement Renzulli's Schoolwide Enrichment Model (SEM) into its policy for gifted education, with a minimum of teacher in-servicing. This model has been included in the Staff Development Package (see Appendix 8).

The surprisingly low response for excursions and visits (14%) causes some concern. Children from these minority groups usually enter the school arena considerably deprived of such relevant experiences. It could almost be considered a responsibility of the school (especially with the channelling of very large amounts of the Federal Government's Disadvantaged Schools Program funds into schools over many years) to supplement limited home experiences. This concern was further addressed in the Intervention Program (Chapter 5).

Only 12% of teachers indicated that some "withdrawal time", including across-grade exchange was practised, and 4% saw some form of accelerated progression as useful. The use of self-evaluation, whereby the gifted child actually sets his / her own progress and goals, was noted by only one teacher.

Analysis of the teachers' responses in Table 4.13 yielded only 4% using differentiated curriculum or Bloom's Taxonomy as an integral part of their classroom planning strategy. However, because of the number of strategies being implemented (Table 4.13) it is obvious that teachers are making instructional decisions. What is essential, though, is that these decisions are based on sound identification and instructional procedures and not on an ad hoc basis.

It can probably be assumed that any gifted education pre-service or in-service training, for all teachers at the three sites, would mirror the responses of the Kindergarten and Year 1 teachers. These details were erroneously omitted from the research data gathering process - Teacher Questionnaire, which was completed by all staff members (see Table 4.12).

From analysis of data from field notes of classroom observations and teachers' records (and it must be stressed that these observations were only of the children included in the research study - Kindergarten and Year 1 at all sites), several factors emerged. Without realising the theoretical terminology, five teachers (45%) were actually differentiating curriculum in some form. The types of group activities that were set for the class were regularly designed using Bloom's Taxonomy of skills and provided for challenges across the wide range of abilities within the class. "Research Sheets" based on extension of the class units were also provided by three teacher (27%), while extra and challenging reading materials connected to class units of work were made available by nine (82%) teachers (examples are located in Appendix 14).

With the necessary assistance, these teachers would be facilitated to incorporate these instructional strategies into their classroom planning. This issue is also addressed in the Staff Development Package - Classroom Strategies (see Appendix 8).

5.3 To what extent is Portfolio Assessment used and valued?

According to extensive research over many years (Baldwin, 1985; Borland, 1989; Renzulli, Reis & Smith, 1981; Richert, 1985; Wright & Borland, 1993) Portfolio Assessment has "the potential to reveal a lot about their creators. They can become a window into the students' heads" (Wright & Borland, 1993, p.205). Portfolios, unlike IQ and standardised tests are concerned with assessment over time. This distinction was outlined by Chittenden (1991): "as a process, assessment is built around multiple indicators and sources of evidence and in this sense is distinguished from testing" (p.24 in Wright & Borland, 1993, p.205).

From analysis of data gleaned from Question 4 - Teachers' Questionnaire: *How valuable is continual Portfolio Assessment in the identification of gifted children?* it would be assumed that this premise was strongly supported. Using the Chi Square analysis:

Yes = 39

No = 11

CV = 3.84 (Significance Level 0.05)

$$X^2 = \frac{(F_{o1} - F_e)^2}{F_e} + \frac{(F_{o2} - F_e)^2}{F_e}$$

$$= \frac{(39 - 25)^2}{25} + \frac{(11 - 25)^2}{25}$$

$$= \frac{14^2}{25} + \frac{-14^2}{25}$$

$$= 15.68$$

$$15.68 > 3.84$$

There is a significant difference in teachers' attitudes towards Portfolio Assessment with very strong support for the use of such a valuable assessment tool. The reasons given by staff, for and against their value, are represented in Table 4.14.

Table 4.14 Comments about the value of Portfolio Assessment

Response	Comment
Positive:	Shows quickly what children are capable of
	Validates teachers' assessments year to year
	Shows development of particular gift
	Indicates candidates over time - not a one-off test situation
	Availability of past achievements
	Allows reflection
	Statement of proof
	Allows teacher to determine future action
	Provides comprehensive and continuous pattern of progress and achievement
	Assists teachers to make valid judgements - nothing is overlooked or forgotten
Negative:	does not show who is gifted
	Doesn't show areas that children might be gifted in
	Only valuable if relevant information has been included
	Not only needed for gifted
	Depends on the degree to which assessment is made

Unfortunately there is little evidence that this valuable method of pupil assessment, and in particular for identification of gifted children from minority groups, has been seriously considered.

Although expressions of a positive nature, had been shown by most staff, on examination of documents, portfolios were only kept by five of the Kindergarten / Year 1 Teachers (45%), and of these only two (18%), had kept records and work samples that could be effectively used at a later date. It can be assumed then, that although the teachers are aware of the value of portfolio assessment, for some reason they had not put this valuable tool into practice. This point was raised during teacher discussion times and the common response (55%) was that time became the demanding factor. They were really unaware of the fact that the only aspect of 'time' would involve the regular sifting of samples. This process would in fact add a further dimension to assist the accurate assessment of each child which of necessity was a regular and mandatory demand on teacher time. This issue has been addressed in the Staff Development Package - Identification Procedures (see Appendix 8).

CONCLUSION

Especially in the early grades, teachers felt that the needs of all children are best met, and should be met, in the regular classroom. This was also prevalent through the whole primary school. However, teachers felt that they needed a lot more training and resources to develop the skills they need to enhance the educational opportunities of the gifted children and, in particular, gifted children from minority groups.

All staff stated they provided some kind of 'enrichment' for the gifted children, but to avoid 'more of the same', instructional planning strategies need to be addressed. The early intervention program (Chapter 5) which is based on a variety of classroom strategies and implementation of effective resources, was well received by all staff, and accepted as an

initiative that could be implemented immediately with minimal demands on whole school time and money.

Although some withdrawal time, across-grade exchanges and acceleration are easily implemented and cost effective within-school strategies for assisting gifted children they were proposed by relatively few of the staff (16%). Because the majority of teachers indicated that it was very difficult to accurately identify gifted children from minority groups, the use of portfolio assessment, and an appropriate 'checklist' (Baldwin, 1977; Carnellor, 1996; Frasier, 1990) would assist.

However, the immediate need of the teachers from each site, was effective in-servicing in all aspects of gifted education. Then as Senge suggests:

> When a group of people come to share a vision, ... each sees his or her own picture. Each vision represents the whole image from a different point of view. When you add up the pieces of the hologram, the image does not change fundamentally, but rather becomes more intense, more lifelike, more real in the sense that people can truly imagine achieving it. The vision no longer rests on the shoulders of one person [or one group], but is shared and embodies the passion and commitment of all participants (Senge, 1990, p.312 in Renzulli, 1994, p.xvii).

RESEARCH QUESTION 6

<u>What conclusions can be drawn from the test outcomes of the subjects, and what are the implications for developing a new paradigm or theoretical perspective for the identification of giftedness in this population?</u>

To ensure that nothing was omitted from the data, "Test Outcomes" were divided into the following sections for analysis:

1) Identification of academic intelligences.
2) Multifarious Intelligences.
3) Profile Construction.

1. Identification of Academic Intelligences.

The IPMAI consisted of seven test items - three structured with a language basis and four with a mathematical (see Appendix 15). The tests were scored on a 1 - 5 rating (1 low performance to 5 very high performance). These scores were averaged and a resultant score recorded. This test was administered individually to each child. Each of the tests was subdivided into specific skills, for example L1 (Linguistic Test 1) was a problem solving activity involving reading, comprehension, story-telling, linguistic skills (structure, sequence, vocabulary and usage), manipulative skills, creativity and design. M1 (Mathematics Test 1) involved bead threading: a) following a colour pattern, but no shape difference; and, b) following a colour and shape pattern.

These skills were ranked to give an overall total and then averaged for the full score for each test. These scores were later converted into graphic form for staff use. This enables the teacher to gain an overview of each child very quickly while demonstrating strengths or weaknesses, by referencing the test requirements (see Appendix 5 and 15). For example Child K.1 / A scored above average for all tests, with dominant strengths in Mathematics. These results are included in Appendix 9. Examples of these results are shown in Figures 4.13 - 4. 15.

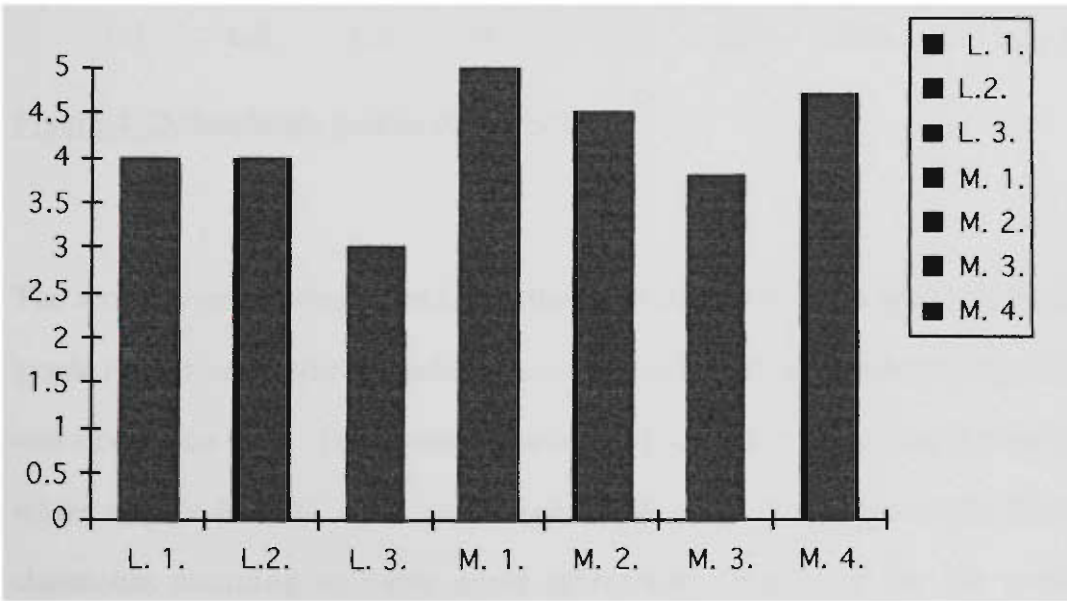


Figure 4.13 Academic profile of K. 1/A.

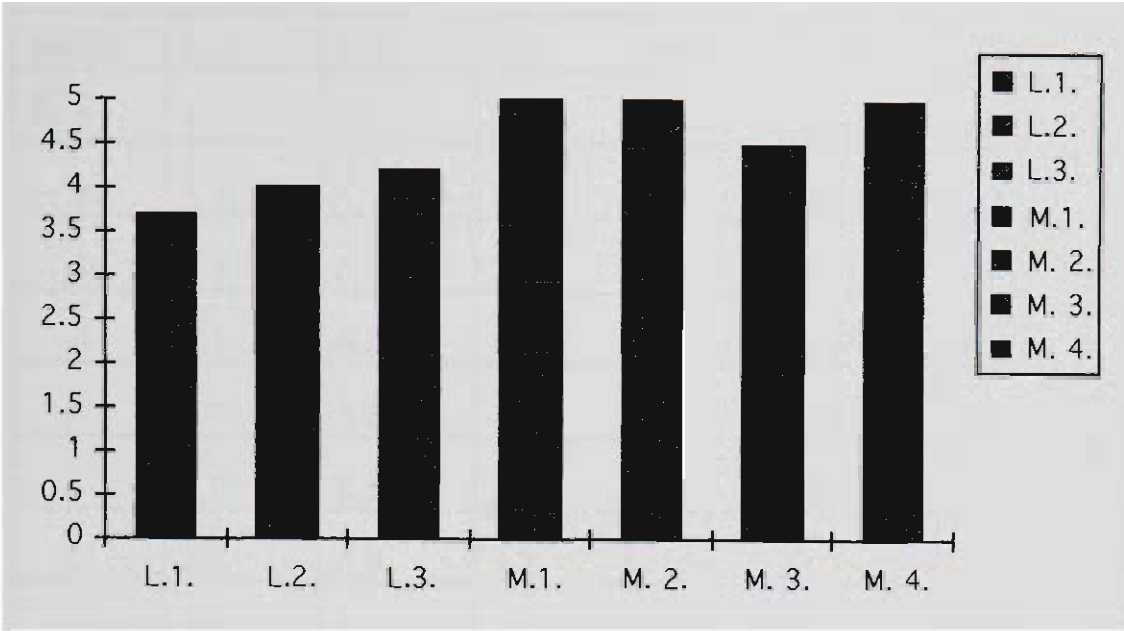


Figure 4. 14 Academic profile of K. 2/C.

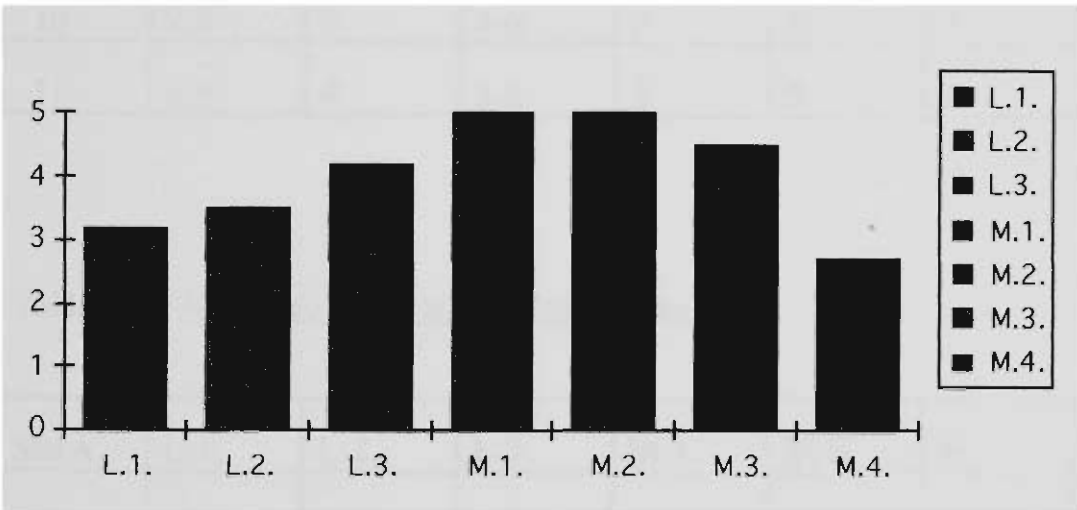


Figure 4.15 Academic profile of Y1. 3/B

The scores were also recorded for further analysis across each grade for each site. These 'grade results' enabled class/school decision-making in areas where they considered there was a common need. For example the overall score for L1 at Site B was low (80% <3) while results for M1 were very high (80% =5). Teachers could thus adapt their classroom planning to cater more effectively, not only for the weaknesses, but enrichment for strengths. These results are illustrated in Tables 4.15 - 4.20.

Table 4.15 Academic scores across Kindergarten - Site A.

Site A	L.1.	L.2.	L.3.	M.1.	M.2.	M.3.	M.4.
K. 1	4	4	3	5	4.5	3.8	4.7
2	3.3	3	3.4	5	5	4.2	4
3	3.4	3	3.6	5	5	3.8	5
4	4.1	4.5	4.4	5	4.5	4	5
5	3.7	4.5	4.2	1	3.5	4.7	5
6	2.7	2.5	3.4	5	5	4.5	4.4
7	2.6	2.5	3.2	1.5	3	2.2	4.7
8	4.1	4	4.6	5	5	4.5	3.7
9	3.1	4	4.6	5	4	4.7	5
10	2.3	2	3.6	5	5	3.7	5
11	3.9	4	3.8	5	5	4	5

Table 4.16 Academic scores across Year 1 - Site A.

Site A	L.1.	L.2.	L.3.	M.1.	M.2.	M.3.	M.4.
Y.1. 1	3.9	4.5	4.8	5	5	4.5	2.7
2	2.6	3.5	4.8	5	5	4.5	3.3
3	4.1	3.5	4.8	5	5	4.3	4
4	4.4	4	5	4	5	4.2	3.6
5	4	5	4	5	5	5	2
6	3.6	3.5	3.6	5	5	4.3	2.6
7	3.6	3	3.6	5	5	3.8	2.3

Table 4.17 Academic scores across Kindergarten - Site B.

Site B	L.1.	L.2.	L.3.	M.1.	M.2.	M.3.	M.4.
K. 1	3.5	4	3.4	5	4	3	4
2	3.3	3.5	2.2	5	5	2.3	3.7
3	2.6	3.5	2.2	1	1	2.3	3.7
4	2.3	3	3	5	5	4.3	5
5	2	3	3.2	5	5	4.7	5
6	2.4	3.5	2.2	5	4.5	4.3	5
7	2.4	3	3.2	1.5	5	2.5	4.7
8	2.6	3	2.4	5	5	3.8	5
9	3	4	4	5	5	4.8	5
10	1.2	1	2	5	4	1.8	4.7

Table 4.18 Academic Scores across Year 1 - Site B.

Site B	L.1.	L.2.	L.3.	M.1.	M.2.	M.3.	M.4.
Y.1. 1	3	3.5	4.2	5	5	4.6	3.8
2	3.2	4	4	5	5	4.7	3.8
3	3.2	3.5	4.2	5	5	4.5	2.7
4	2.7	1	3.6	4.5	5	4.3	3.2
5	3.7	4	3.6	5	5	4.5	3.2
6	2.7	3.5	3.2	5	5	4	3.3
7	3.4	4	3.6	5	5	5	4.7

Table 4.19 Academic scores across Kindergarten Site C.

Site C	L.1.	L.2.	L.3.	M.1.	M.2.	M.3.	M.4.
K. 1	4.7	4	4.4	5	5	4.5	5
2	3.7	4	4.2	5	5	4.7	5
3	4.4	5	4.8	5	5	3.5	5
4	4	2	4.8	5	5	4.3	4.7
5	4.1	5	4.2	5	5	4.8	5
6	4.4	4.5	4.2	5	5	4.5	5
7	4.4	5	4.2	5	5	4.8	5
8	4.4	4.5	4.2	5	5	4.7	5
9	4.4	3.5	4.2	2.5	4.5	4	4.9
10	4.4	5	4.6	5	5	4	4.7

Table 4.20 Academic scores across Year 1 - Site C.

Site C	L.1.	L.2.	L.3.	M.1.	M.2.	M.3.	M.4.
Y.1 1	4.7	4	5	5	5	5	4.4
2	2.3	4	4.2	5	5	4.8	2.7
3	5	4	5	5	5	4.7	3.6
4	4.7	5	4.6	5	5	5	3.9
5	4.7	5	4.8	5	5	5	3.7
6	4.9	4.5	4.4	5	5	5	4
7	3.4	4	4.8	5	5	5	4.6

To detect any common threads evolving across the generally categorised minority groups, a comparison of results for each site across each grade was also calculated. These results are illustrated in Figures 4.16 and 4.17.

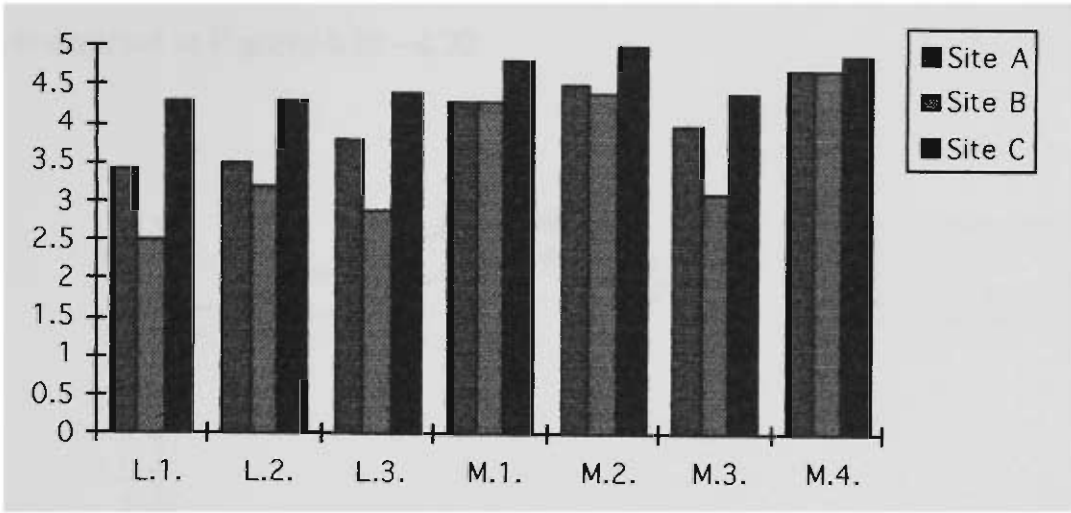


Figure 4.16 Comparison of Kindergarten results across sites.

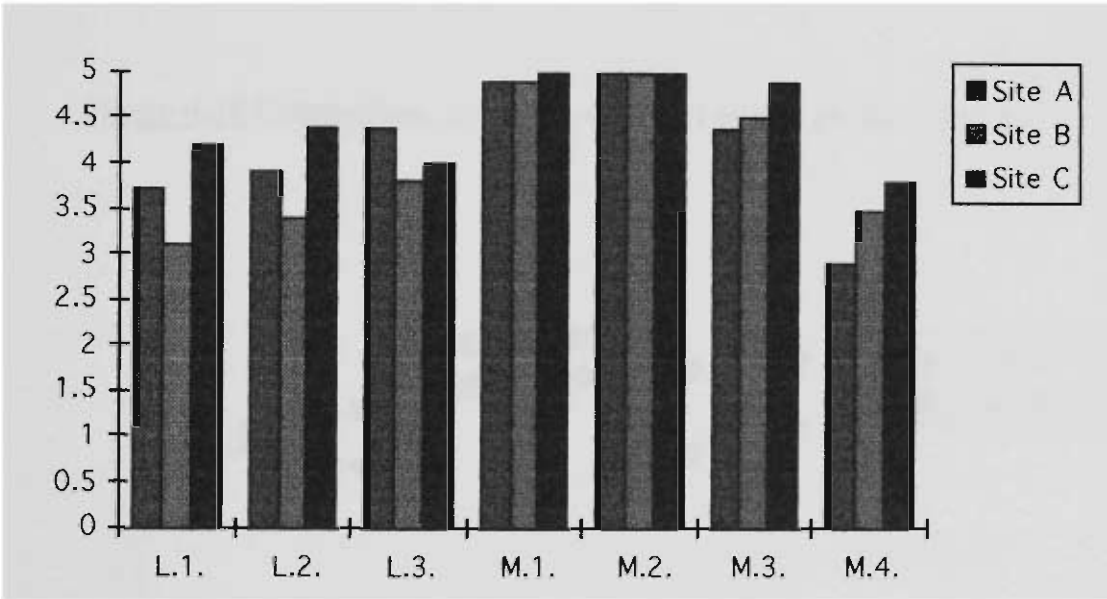


Figure 4.17 Comparison of Year 1 results across sites.

While there were some different patterns emerging, especially in Linguistic Tests, for the Kindergarten groups, the results for Mathematics was fairly constant and quite high. Reasons for this have been attributed to a) the test was not demanding extensive mathematical knowledge and will need to be revised for future use; and, probably the more likely reason was b) the test was administered too late in the year. It is advised that the IPMAI be given as early as possible, and no later than the end of Term 1. The M3 Test for Year 1 proved to be the most difficult but required language skills as well as

mathematical knowledge. Site C, whose children scored at a more constantly high level in the Linguistic Tests also demonstrated the best results in M3 (Site average of 3.85). To assist within school/class decision making the comparative results for each grade at each site is depicted in Figures 4.18 - 4.20

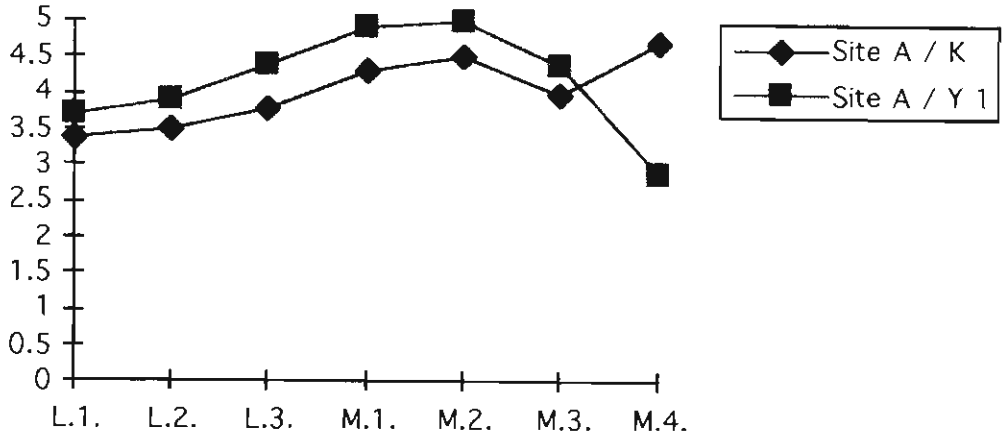


Figure 4.18 Comparison of results of IPMAI across grades - Site A.

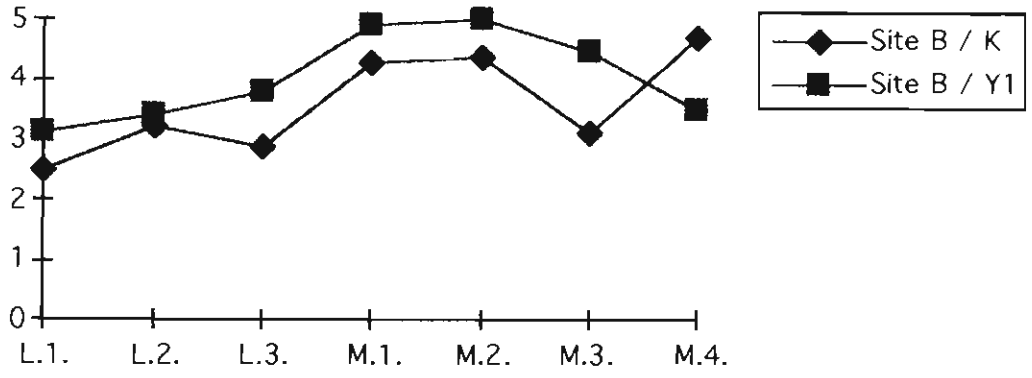


Figure 4.19 Comparison of results of IPMAI across grades - Site B.

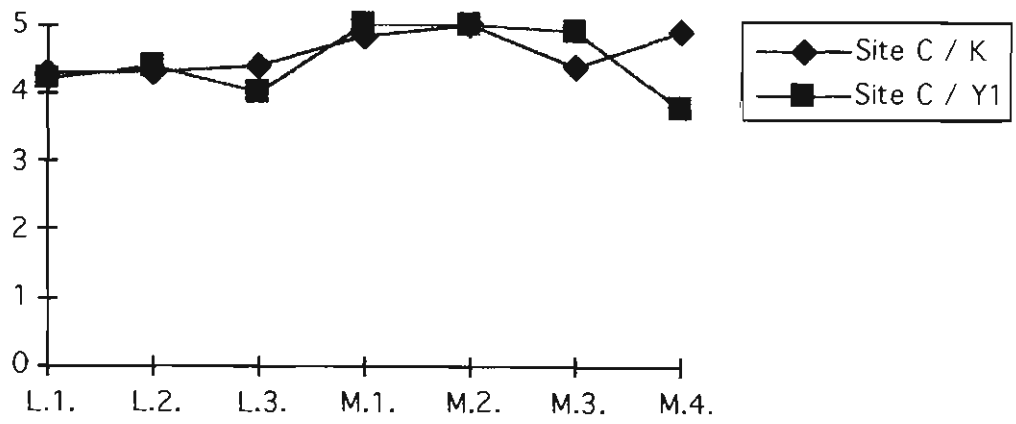


Figure 4.20 Comparison of results of IPMAI across grades - Site C.

2. Multifarious Intelligences Emerge.

As testing proceeded it became obvious that a lot more information about each child was emerging. To record these data more accurately the 'subtests' of each item were clustered using multifarious intelligences as the measure. This enabled the researcher to establish the extent of attributes such as creativity, memory skills, spatial intelligence, motor skills and interpersonal intelligence for each child, as well as the academic intelligences of mathematics and verbal linguistic. The same 1 - 5 rating scale was maintained to interpret data. The results were scored for each child in graphic form to be returned to each classroom teacher for use in classroom planning. All linguistic and mathematical subtests were clustered together as Linguistic and Mathematical Intelligences, and Creativity, Fine Motor, Memory and Interpersonal Intelligences were added. This enabled the teacher to gain a more comprehensive overview of each child. It facilitated the emergence of developmental areas that are of utmost importance in the early years, and unfortunately, often forgotten in classroom planning, and in particular, for incorporating strategies to meet the individual/group needs and/or strengths. It also gave greater insight into possible reasons for "failure". For example Child K. B/10 scored very poorly on creativity and Interpersonal skills (1.7), which would certainly have bearing on his linguistic results (2.4) while probably not affecting Mathematics (3.4) as extensively. Comparing these Multifarious Intelligences results with his IPMAI scores, which demonstrated very low

linguistic results (L1 = 1.2; L2 = 1; L3 = 2) and mostly high mathematical results (M1 - 5; M2 = 4; M3 = 1.8; M4 = 4.7) the teacher would be encouraged to use different language situations, as it may not be language skills he lacks, but the environment may not be conducive to producing his full capabilities. These are included in Appendix 10. Examples of these results are shown in Figures 4.21 - 4.23 each grade at each site.

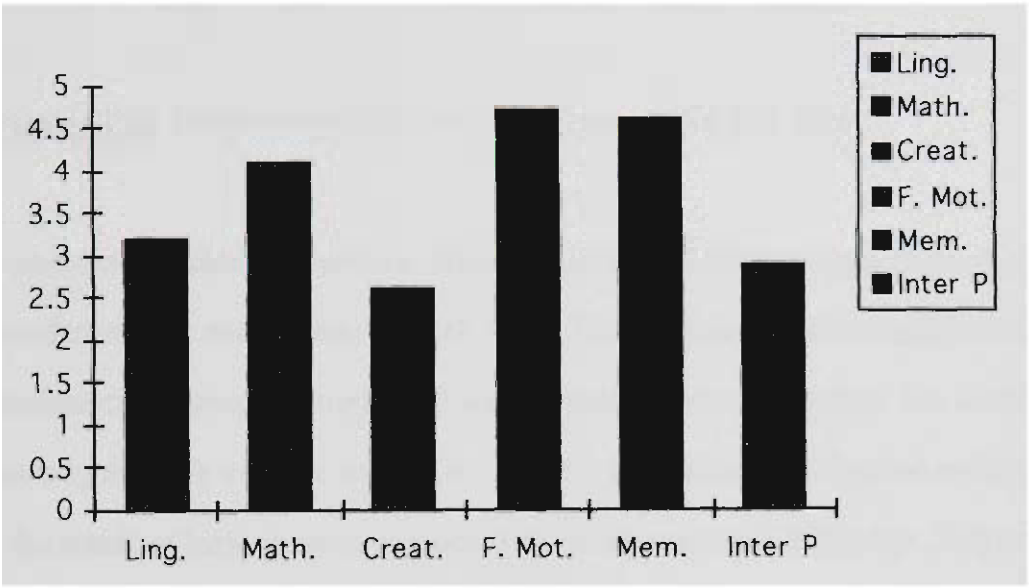


Figure 4.21 Profile of multifarious intelligences for K. A/6

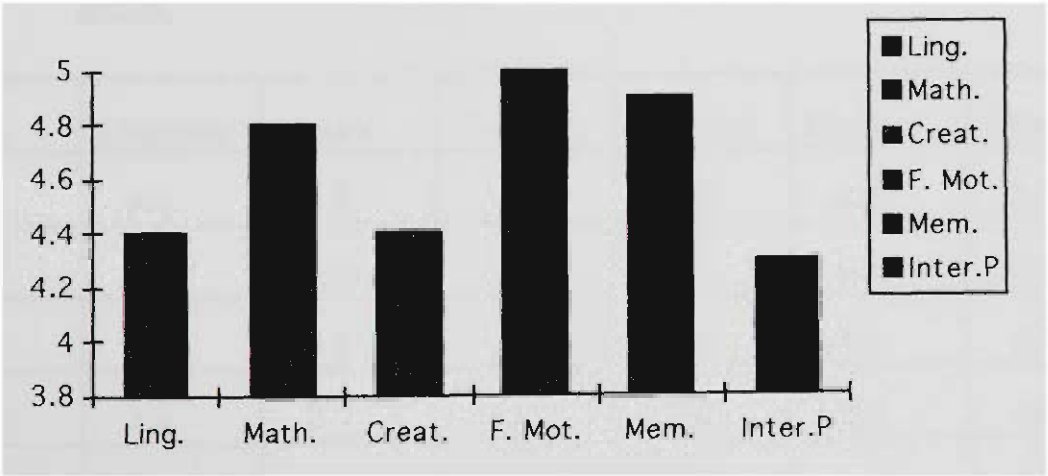


Figure 4.22 Profile of multifarious intelligences for K. C/5.

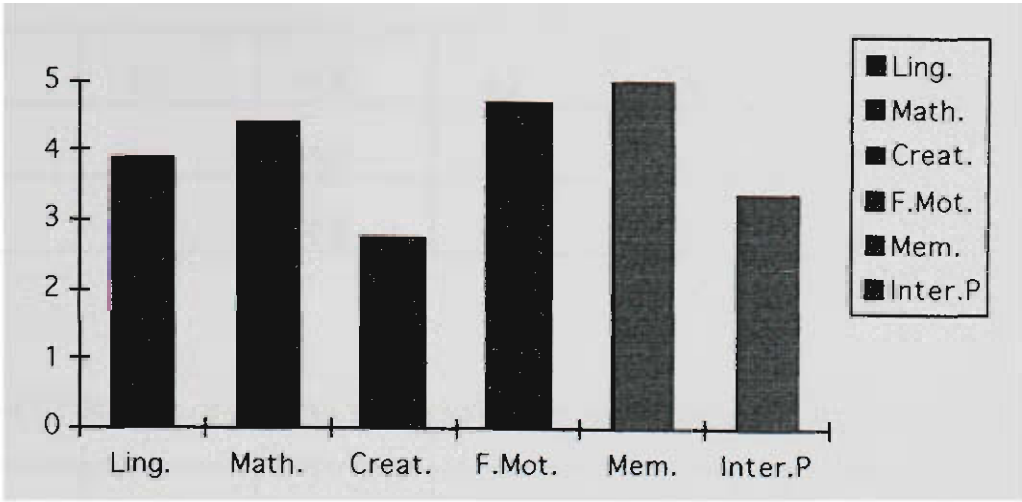


Figure 4.23 Profile of multifarious intelligences for Y.1. B/7.

To assist class/school program evaluation and future development these results were also recorded across each grade at each site. This enabled teachers/supervisors to address common class/group strengths and weaknesses in future planning. For example Site A-K showed generally average scores (av. 3.6) for Linguistic Intelligence results which could be the result of lack of creativity (av. 3.5) or Interpersonal Skills (av. 3.6) so necessary in language development in the early years. Conversely, Site C maintained high scores >4,2 across all intelligences. This information is demonstrated in Tables 4.21 - 4.26.

Table 4.21 Results of analysis for multifarious intelligences for Kindergarten - Site A.

Site A	Linguistic	Math's	Creativity	F. Motor	Memory	Interpers.
K. 1	3.4	4.5	3.8	4.2	4.4	3.1
2	3.4	4.2	2.8	4.4	4.3	3.3
3	3.6	4.5	3.8	5.0	4.5	3.4
4	4.4	4.7	4.2	4.9	4.5	4.6
5	4.0	4.1	4.0	3.5	4.1	4.0
6	3.2	4.1	2.6	4.7	4.6	2.9
7	2.9	3.5	2.4	3.9	3.0	2.9
8	3.8	4.3	4.0	3.8	4.4	4.3

9	3.9	4.8	4.2	4.8	4.7	4.3
10	3.4	4.6	3.4	4.9	4.4	3.3
11	4.1	4.5	4.0	5.0	4.6	3.7

Table 4.22 Results of analysis for multifarious intelligences for Year 1 - Site A.

Site A	Linguistic	Math's	Creativity	F. Motor	Memory	Interpers.
Year 1 1	4.2	3.9	4.5	3.7	4.7	4.7
2	3.5	4.1	3.0	4.0	4.7	3.9
3	4.3	4.5	4.25	4.4	4.6	4.4
4	4.4	4.5	4.5	3.9	4.3	4.5
5	3.9	3.4	4.25	3.5	5.0	4.1
6	3.5	3.5	3.25	3.6	4.6	3.3
7	3.5	3.4	3.25	3.3	4.4	3.4

Table 4.23 Results of analysis for multifarious intelligences for Kindergarten - Site B.

Site B	Linguistic	Math's	Creativity	F. Motor	Memory	Interpers.
K. 1	3.4	4.1	3.4	4.5	4.1	3.3
2	3.5	4.5	3.2	4.8	4.2	3.1
3	2.6	3.1	2.4	2.8	2.8	2.1
4	3.3	4.3	2.8	4.8	4.7	2.7
5	3.4	4.3	2.6	4.7	4.9	2.9
6	3.2	4.1	2.4	4.8	4.6	2.1
7	3.4	3.8	2.6	4.2	3.4	2.9
8	3.1	4.3	2.8	4.9	4.5	2.3
9	3.9	4.6	3.6	4.9	4.9	3.7

10	2.4	3.4	1.8	4.4	3.4	1.7

Table 4.24 Results of analysis for multifarious intelligences for Year 1 - Site B.

Site B	Linguistic	Math's	Creativity	F. Motor	Memory	Interpers.
Year 1 1	3.9	3.9	2.75	4.3	4.8	3.7
2	3.9	4.0	2.5	4.2	4.6	4.3
3	4.0	3.8	3.0	3.5	4.7	3.7
4	3.1	3.2	2.5	3.6	4.5	3.1
5	4.2	3.9	2.75	3.9	4.7	3.7
6	3.3	3.8	2.0	3.9	4.4	2.9
7	3.9	4.4	2.75	4.7	5.0	3.4

Table 4.25 Results of analysis for multifarious intelligences for Kindergarten - Site C.

Site C	Linguistic	Math's	Creativity	F. Motor	Memory	Interpers.
K. 1	4.6	4.8	3.6	5.0	4.8	4.1
2	4.2	4.8	3.6	5.0	4.9	4.0
3	4.7	4.9	4.6	5.0	4.4	4.7
4	4.3	4.7	4.0	4.7	4.6	4.1
5	4.4	4.8	4.0	5.0	4.9	4.3
6	4.5	4.8	4.4	5.0	4.8	4.3
7	4.5	4.8	4.4	4.9	4.9	4.3
8	4.5	4.8	4.2	5.0	4.9	4.3
9	4.2	4.1	4.2	4.4	4.1	4.3
10	4.6	4.7	4.6	4.8	4.4	4.0

Table 4.26 Results of analysis for multifarious intelligences for Year 1 - Site C.

Site C	Linguistic	Math's	Creativity	F. Motor	Memory	Interpers.
Year 1 1	4.7	4.8	4.25	4.7	5.0	4.7
2	3.5	3.7	2.75	3.5	4.9	3.7
3	4.9	4.3	4.75	4.2	4.8	4.9
4	4.7	4.4	4.5	4.3	5.0	4.7
5	4.7	4.4	4.75	4.3	5.0	4.9
6	4.7	4.4	4.0	4.4	5.0	4.3
7	4.5	4.6	3.25	4.8	5.0	4.3

A site / grade average for each cluster was also calculated. These results were for the researcher's consideration rather than for school personnel. These data provided insight into any commonalities across groups and across sites which assisted validation of the IPMAI as a testing mechanism for minority groups from a variety of demographic areas. These results are represented in Figures 4.24 and 4.25.

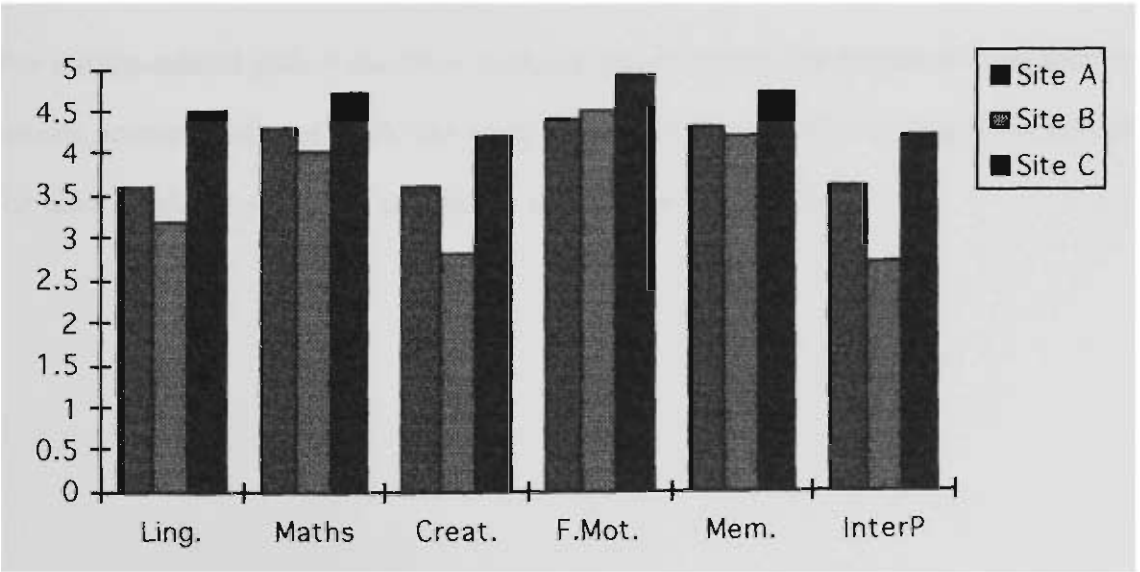


Figure 4.24. Comparison for multifarious intelligences for Kindergarten across sites.

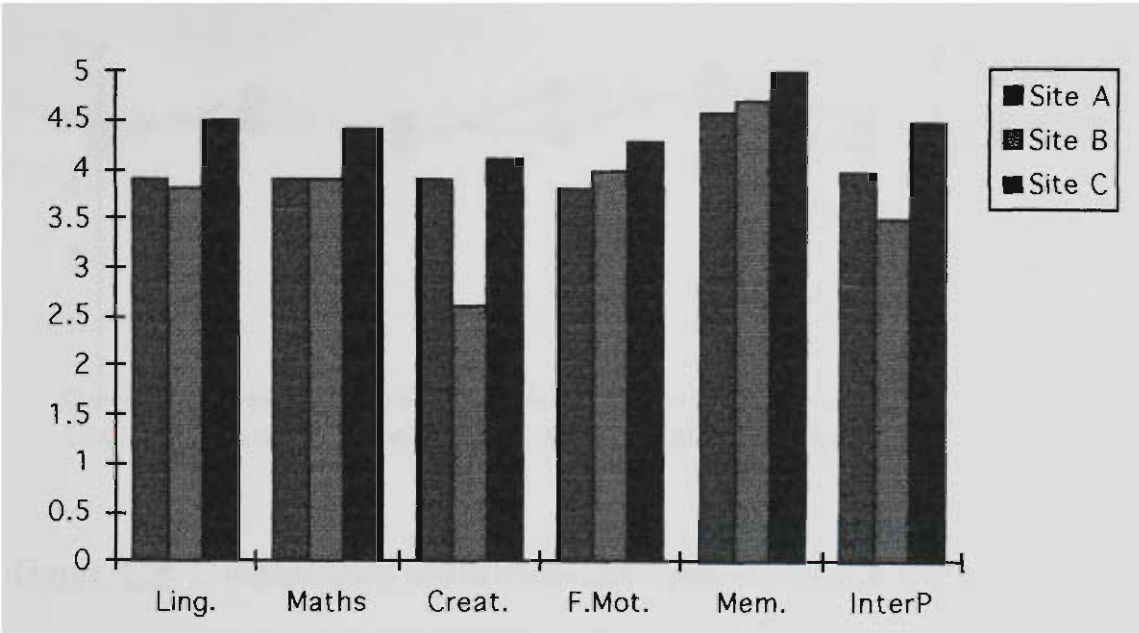


Figure 4.25 Comparison for multifarious intelligences for Year 1 across sites.

The patterns of results generated, were fairly constant across all sites with the exception of Creativity and Interpersonal Intelligences at Site B across both grades. This 'difference' was brought to the attention of the school staff. Linguistic Intelligence was much higher from Site C which consisted of a more middle-class NESB population than Sites A and B which were very similar economically as well as multiculturally. Sites A and B also have more First Phase ESL children within their school populations.

For within-school policy decision-making and program development comparative results across grades at each site were also compiled. These comparative results for each grade, at each site are shown in Figures 4.26 - 4.28.

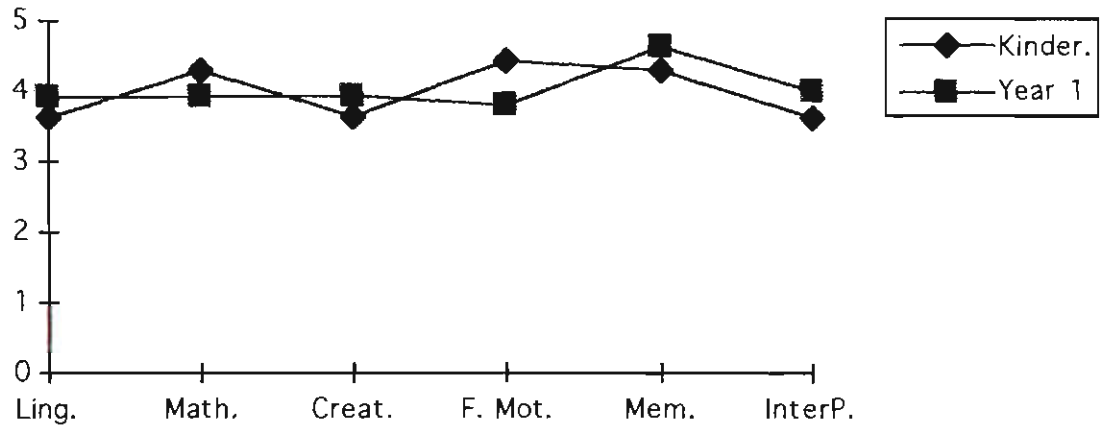


Figure 4.26 Comparison of multifarious intelligences scores at Site A.

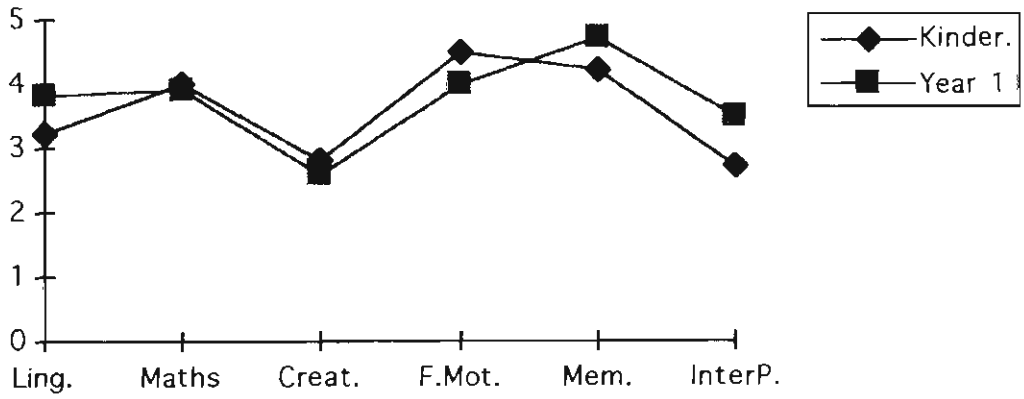


Figure 4.27 Comparison of multifarious intelligences scores at Site B.

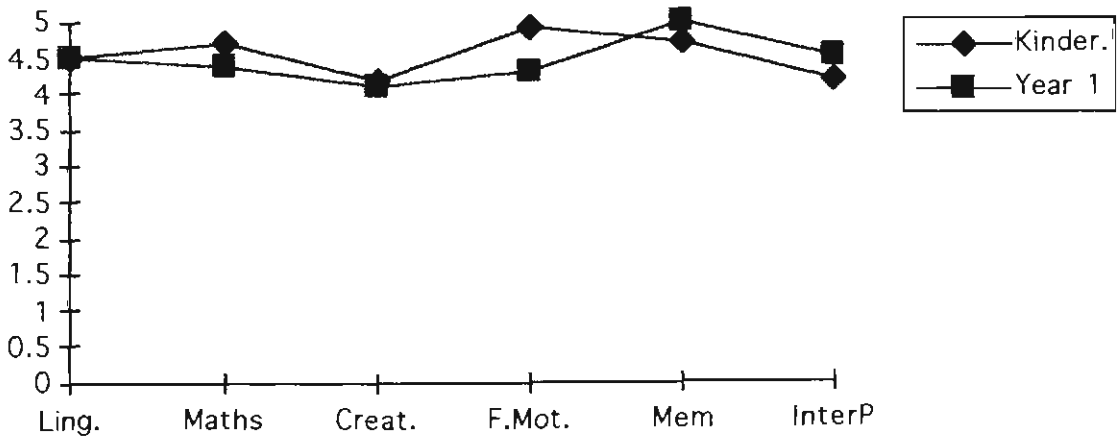


Figure 4.28 Comparison of multifarious intelligences scores at Site C.

The results for all sites were reasonably uniform across the grades, however Site B shows that there is a definite need to enhance creative and interpersonal skills of the children in Kindergarten and Year 1.

The Peabody Picture Vocabulary Test (1981) and the "Draw a Man" Test (1963) were also administered to each child. These standardised forms of assessment were used to validate findings from the IPMAI for the fifty-two children included in the study, the results were as follows as shown in Tables 4.27 and 4.28

Table 4.27 Results of Peabody P.V. Test across grades and sites.

Test	Site	Grade	Participants	Score
Peabody P.V.	A	K	n = 11	>100 = 2
"	B	K	n = 10	>100 = 3
"	C	K	n = 10	>100 = 8
"	A	Y 1	n = 7	>100 = 2
"	B	Y 1	n = 7	>100 = 4
"	C	Y 1	n = 7	>100 = 7

Table 4.28 Results of Draw a Man Test across grades and sites.

Test	Site	Grade	Participants	Score
Draw a Man	A	K	n = 11	>100 = 6
"	B	K	n = 10	>100 = 7
"	C	K	n = 10	>100 = 8

"	A	Y 1	n = 7	>100 = 7
"	B	Y 1	n = 7	>100 = 7
"	C	Y 1	n = 7	>100 = 7

The results of the Peabody were very similar to those of the IPMAI, where only the children from Site C (80% for Kindergarten and 100% for Year 1) demonstrated an above average linguistic knowledge, particularly in the area of vocabulary. Sites A and B again produced very similar results. For Site A, 18% of Kindergarten and 29% of Year 1 scored above average, and for Site B, 30% of Kindergarten and 57% of Year 1 scored above average. However, in the Draw-a-Man Test which required no language skills, the results were similar and much higher for each site. Kindergarten Site A = 55%, Site B = 70% and Site C = 80%; while for Year 1 Site A = 100%, Site B = 100% and Site C = 100% scored above average.

If these children had been give only some kind of standardised assessment which is very heavily language biased, as a determinant of giftedness, the majority would have been overlooked. It is essential that all indicators are investigated over an extended period of time, while at the same time ensuring that a wide variety of experiences and enrichment are included in classroom practices. These may have been omitted in the early years at home, only because the parents were unaware of the type of environments they can provide, which will enhance the child's individual educational potential. Parent support and guidance is an integral part and a responsibility of the total school development plan. This issue has been addressed in both Chapter 5 and Appendix 8.

3. Total Pupil Profile Construction.

This research study was twofold in its aims:

1) to identify academically gifted children from minority groups as early as possible in their school life in order to:

2) develop an effective early intervention program that would enhance the educational opportunities for gifted children from minority groups.

Multiple data collection processes were included so that nothing of relevance and importance concerning each child would be omitted in constructing an overall individual profile. This profile would effectively indicate to teachers, the strengths and weaknesses in the child's performance, and allow for more informed decision making when planning classroom instruction pertaining to individual class members.

Comparing results across a grade would also enable more general assumptions, highlighting common areas of whole-class excellence and need.

These individual profiles were constructed according to Table 3.9, based on Gardner's Multiple Intelligences. This allowed an even broader perspective of each child to be developed to facilitate more accurate 'assessment' of giftedness. Each segment of the profile was completed using data from all people involved (teacher, parent, student, other students and researcher) using the 1 - 5 ranking system and the same guidelines as the IPMAI: 1 - low performance; 2 - below average performance; 3 - average performance; 4 - high performance; and 5 - very high performance. All 'results' were then averaged to gain a "total rating". This rating for Linguistic, Logical / Mathematics, Spatial and Interpersonal Intelligences were further compared with the IPMAI (multifarious results) for validation of the instrument. These profiles are included in Appendix 11. Examples are depicted in Tables 4.29 - 4.31.

Table 4.29 Total pupil profile of Student A/K.9.

	Linguistic	Logical/ Math's	Spatial	Musical	Bodily/ Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	3	4	4	5
Observed by teacher	5	5	4	4	5	5	4
Portfolio Assess't	4	5	5	—	—	5	—
Child's Perception i) self ii) others	3 5	4 5	5 5	3 4	4 4	3 5	3 4
Parent / Community Perception	5	5	4	3	5	4	4
IPMAI Results	4	4	4	—	—	4	—
RATING	4.2	4.6	4.4	3.4	4.4	4.3	4.0

Table 4.30 Total pupil profile for Student A/Y1. 5.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	5	4	5	4	4
Observed by teacher	4	4	5	5	4	5	4
Portfolio Assess't	4	4	4	—	—	5	—

Child's Perception i) self ii) others	4 5	3 4	4 5	4 4	4 4	3 4	3 5
Parent / Community Perception	4	4	4	4	4	5	4
IPMAI Results	4	3	4	—	—	4	—
RATING	4.1	3.7	4.4	4.2	4.2	4.3	4.0

Table 4.31 Total pupil profile for Student C/K.8.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	5	5	2	4	4	2	2
Observed by teacher	5	5	3	4	4	4	2
Portfolio Assess't	5	5	4	—	—	4	—
Child's Perception i) self ii) others	5 5	5 3	3 4	4 4	4 4	3 2	4 2
Parent / Community Perception	5	5	5	4	4	3	3
IPMAI Results	5	5	4	—	—	4	—
RATING	5	5	3.6	4	4	3.1	2.6

Due to some data being unavailable, not all profiles were completed. Unfortunately, portfolios were not available for all participants and Teachers' Observation Journals (see Table 3.8) were also not maintained for all participants. However, this area of ongoing record keeping was discussed with each teacher and the value for its use as both an identification technique and a basis for classroom planning and instruction were emphasised. This issue has been further addressed in Staff Development Package - Identification and Classroom Strategies (see Appendix 8).

These profiles added the dimensions of all data collecting processes and did not rely solely on the test outcomes, which could have been influenced by the one-to-one situation with a researcher whom the children knew only casually.

CONCLUSION

According to Gardner's Theory of Multiple Intelligences :

> ... each human being is capable of seven relatively independent forms of information processing, with individuals differing from one another in the specific profile of intelligences that they exhibit. The range of human intelligences is best assessed through contextually based 'intelligence-fair' instruments (Gardner & Hatch, 1989, p.4).

The IPMAI was developed to assess the academic skills, namely linguistic and mathematical, of young children (Kindergarten and Year 1) from minority groups and identify potentially gifted children from these groups. From the results for each school and across sites, it was anticipated that an effective early intervention program would be designed and subsequently implemented by the teachers of these early childhood years to enhance the educational opportunities and outcomes of the identified children.

From the ouset it was also emphasised that as an identification instrument it should not be used in isolation, but be an integral part of ongoing assessment procedures, highlighting areas that may require assistance or further enrichment.

From the analysis of the results obtained from the IPMAI it became obvious that "...the human mind may be quite modular in design. That is separate psychological processes appear to be involved in dealing with linguistic, numerical, pictorial, gestural and other kinds of symbolic sytems" (Gardner & Hatch, 1989, p.5). This was particularly highlighted in results that showed a large discrepancy in results of linguistic and mathematics tests, (for example, K.10 / A; K.8 / B and K.10 / B). Educational implications would be the need to develop a classroom program for instruction to address both group and individual needs, while ensuring that enrichment activities are provided to meet the needs of those who demonstrated potential giftedness, allowing them the opportunities to solve "... simple problems in the most efficient, effective or economical ways" (Maker, 1992, p.13).

RESEARCH QUESTION 7

Is the IPMAI a reliable and efficient instrument for the identification of young NESB, Aboriginal and Low SES students?

The results of the IPMAI as represented in the individual profiles for each child (see Appendix 9) demonstrated very similar results with both the Multifarious Intelligence Profiles for each participant and the Total Pupil Profiles that were completed. These two latter profiles gave a much more comprehensive picture of each child and enabled teachers and parents to become aware of the areas of individual strengths. These records, compiled over time, would enhance accurate identification of giftedness and assist the teacher with classroom planning and curriculum differentiation. However, it is recommended that the Total Pupil Profile be maintained throughout the entire Kindergarten year, and for best results, kept for each child, avoiding any human error of misjudging children. This profile would omit 'Researcher Observations' but as these classes all had the benefits of staff support, these teachers could be substituted.

The IPMAI took approximately four hours per child to administer effectively, but like the Total Pupil Profile, it is suggested that these 'test items' be completed over time - preferably during Term 1 of Kindergarten.

The Mathematics Test for Kindergarten did not extrapolate the thinking skills or mathematical knowledge for the Kindergarten children included in the Research Sample (average over all participants = 4.8), and will need to be revised to obtain reliable results for future use. However, this high average result could have been due to the fact that the IPMAI was administered when the Kindergarten children had been in school for a minimum of six months. A much more accurate result would probably have been given at the beginning of Kindergarten, which is recommended.

The subtest of 'Time' in the Year 1 Mathematics Test was very poorly answered (average over all participants = 2.6). Although many staff felt that it was an 'unfair item' as it had not been 'taught' in class, the aim of the test was to establish mathematical giftedness, and it was presumed that gifted Year 1 children would have little difficulty with such an item which involved only hour (o'clock) and half-hour (half-past) time. However, another explanation could be accredited to the constant familiar use of digital time. This subtest presumed a knowledge of analogue time representation.

When the results of the IPMAI were compared with the results of 'Draw-a-Man' and 'Peabody Picture Vocabulary' Test, there was a much stronger correlation with 'Draw-a-Man' ($r = .62$ and a coefficient of determination of 38.44%), while the correlation with the Peabody was low ($r = .33$ and a coefficient of determination of 10.89%). This substantiates the notion that to identify giftedness in this population, there is a need for non-traditional tests in place of the traditionally used intelligence tests.

To show a comparative result, the standard scores of the Draw-a-Man and Peabody Tests were converted to a 1 - 5 ranking as shown in Table 4.32.

Table 4.32 Conversion of Standard Scores to Ranking.

Standard Score	Ranking
<75	1
76 - 85	2
86 - 95	2.5
96 - 105	3
106 - 115	3.5
116 - 125	4
126 - 135	4.5
>135	5

With the exception of some children who had a higher result in Peabody than Draw-a-Man, (Site A - 16%; Site B - 6% and Site C - 35%) the results for the Draw-a-Man Test were much closer to the results of the IPMAI Test results than the Peabody results. Of the ten children whose scores on Peabody were higher than the Draw-a-Man Test results, 50% were Australian children. These comparative results are indicated on the IPMAI results of all participants in Appendix 13. Examples are shown in Figures 4.29 - 4.31.

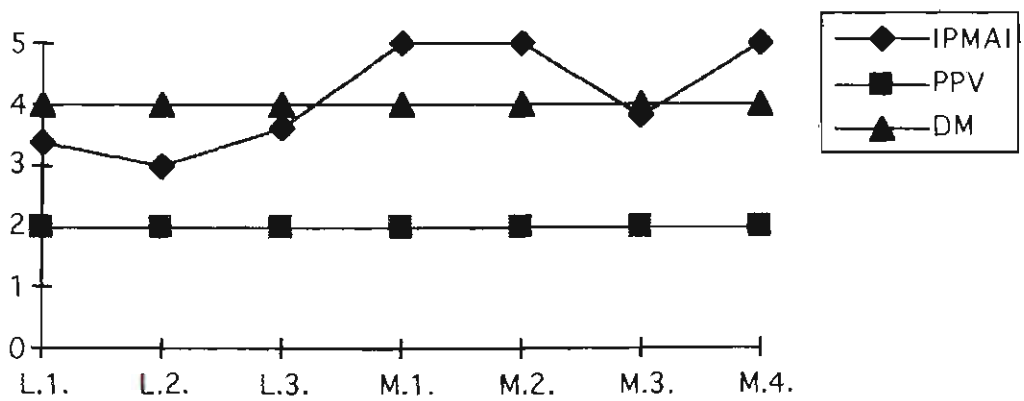


Figure 4.29: Comparison of IPMAI, Peabody Picture Vocabulary Test and Draw-a-Man for A/K. 3.

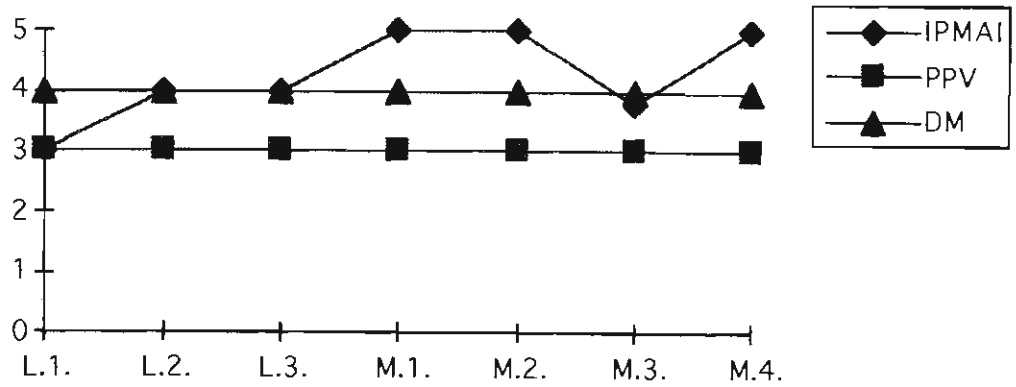


Figure 4.30: Comparison of IPMAI, Peabody Picture Vocabulary Test and Draw -a-Man for B/K. 9.

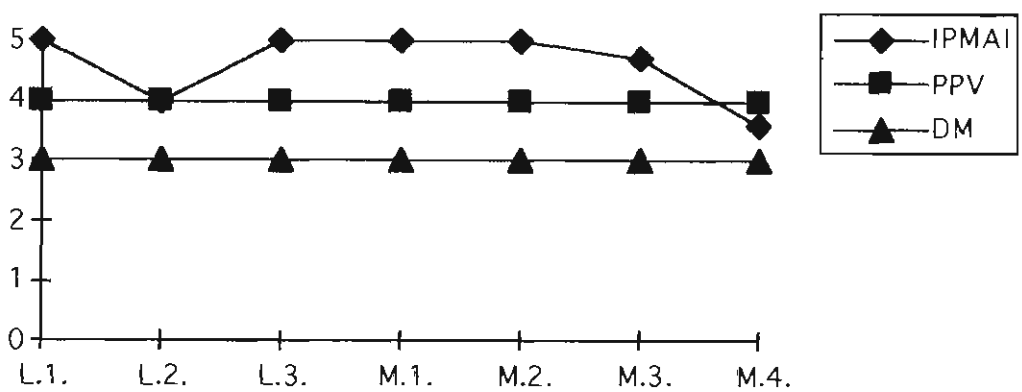


Figure 4.31: Comparison of IPMAI, Peabody Picture Vocabulary Test and Draw-a-Man for C/Y1. 3

As demonstrated in Table 4.21 - 4.26 and Figures 4.24 - 4.25, these results may be further broken down into components of Multifarious Intelligence. This step is not essential but when done carefully, although time consuming, will certainly allow a more comprehensive picture of the child's ability to be displayed and used by teachers and school executive to develop the essential and effective intervention program that will enhance the learning potential of not only the identified gifted children, but of all children in the group. A copy of the IPMAI Test (unrevised - as used in this research study) is included in Appendix 15.

CONCLUSION

With the exception of the Mathematics Screening Test - Kindergarten, the outcomes of the IPMAI were very pleasing in the identification process of potentially gifted youngsters in early childhood years from minority (namely NESB and Low SES) backgrounds. This format has not yet been used with any young Aboriginal children, but it is expected that similar outcomes could be predicted.

To administer the test in total is time consuming and attention demanding for 'examiner' and each child. Although the children are involved in 'hands on' activities as well as pencil and paper and oral responses, a more accurate assessment would be obtained by presenting the various test items to obtain the whole profile over time. The time frame suggested is Term 1 of Kindergarten (and Term 1 of Year 1 where required or desired). This would allow time for the teacher to :

1) implement the most effective intervention program as early in the year as possible; and

2) repeat test items for various children over time who achieved a 'different' result from what was initially 'expected'.

Because the linguistic items are quite complex in nature to gain a 'fair' score for each child, it is recommended that the IPMAI be administered and scored by the same person for each child in a specific class group. All sites had the advantage of support staff (two of them had several support staff available for each class), so it could become part of the school policy for this person to be totally responsible for this aspect of the identification process.

It is emphasised however, that this test schedule, like any other identification process, should not be used in isolation. It is recommended as a guide for identification in mainly academic areas, but needs to be complemented by data gathered from a variety of sources, using as wide a range of formats as is available, and evaluated over time.

CHAPTER 5

DEVELOPING A TOTAL SCHOOL PLAN FOR FACILITATING GIFTED EDUCATION

Each second we live is a new and unique moment of the universe,
A moment that never was before and never will be again.

And what do we teach our children in school?

We teach them that two and two make four
and that Paris is the capital of France.

When will we teach them what they are?

We should say to each of them:
Do you know what you are?
You are a marvel. You are unique.

In all of the world there is no other child exactly like you.

In the millions of years that have passed,
there has never been a child like you.

And look at your body - what a wonder it is!

Your legs, your arms, your cunning fingers,
the way you move!

You may become a Shakespeare,
a Michelangelo, a Beethoven.

You have the capacity for anything.

Yes, you are a marvel.

And when you grow up, can you then harm
another who is, like you, a marvel?

You must cherish one another.

We must all work -
to make this world worthy of its children.

- Pablo Casals.

Life is not easy for any of us.

But, what of that?

We must have perseverance

And above all confidence in ourselves.

We must believe that we are gifted for something.

And that thing, at whatever cost ...

Must be attained.

- Madam Marie Curie.

These writings underpin all aspects of educational practice, that good teachers and administrators are endeavouring to achieve for the children in their care. In developing and refining the School-wide Enrichment Model (SEM) over many years, Renzulli contends that instructional programs that will enhance gifted behaviours will also benefit all children. He maintains that :

> Application of the SEM influences the regular curriculum in three ways. First, the challenge level of required material is differentiated through processes such as curriculum compacting, text book content modification procedures, and group jumping strategies. Second, the systematic content intensification procedures used to replace eliminated content with selected, in depth learning experiences increases the challenge level by introducing the broad underlying principles of a discipline. Third, types of enrichment recommended ... are integrated selectively into regular curriculum activities. Although our goal ... is to influence rather than replace the regular curriculum, application of certain SEM components and related staff development activities have resulted in substantial changes in both the content and instructional processes of the entire regular curriculum (Renzulli, 1994, p.6).

The children who participated in this research study were in regular classroom settings, as are the majority of gifted children. Incorporating the principles of Renzulli's SEM into each school's Total Development Plan, will ensure that these children receive appropriate classroom instruction.

However, from the research findings, three main barriers for the children in attaining their educational potential were evident. These included the lack of reading ability, the lack of enriched vocabulary and the lack of imagination and creativity. At one site, the

lack of everyday experiences that the children brought with them to the educational arena also compounded into personal frustrations and sometimes poor behaviour patterns. It must be noted that although many of the children in the research study were not reading in English, information gleaned from the Community Language School Teachers indicated that they were quite literate in their own languages - some working at quite advanced levels. Using this information, we could assume that given an environment that encourages reading, that provides non-pressured opportunities and sound basic frameworks for it, these youngsters will also acquire English literacy skills quickly and efficiently, and even more so if they can be taught in a bilingual classroom situation.

It is obvious that these young, potentially gifted children are not being challenged in school to the level of their capabilities. In the majority of incidences, this could not be deemed entirely the fault of the school, where most teachers have not received the required training, neither in pre-service nor in-service, to be able to readily identify characteristics of potentially gifted youngsters, especially from the less advantaged backgrounds. It is from this stance that a suggested Intervention Program which must be implemented as early as possible in the school years, must be threefold. It should include techniques to enhance:

a) Classroom Strategies
b) Teacher Development and Support, and
c) Parent Guidance and Support

My primary concern, supported from the research findings, is the need for compulsory training in the area of Gifted Education. The reality is that most teachers have received very little exposure to gifted education and the implementation of necessary classroom planning and strategies that will ensure these children present in every classroom, receive the instruction required for them to gain their full educational potential. As a result of her

research on "Regular Classroom Practices in Grades 3 and 4 in New South Wales", Whitton (1995) found that:

> Little research has been completed ... on techniques used by classroom teachers to differentiate the instruction for gifted students ... Story (1984) proposed six categories of behaviours exemplified by resource teachers of the gifted; however she did not address classroom teachers in her analysis ... [A] paucity of research exists about practices used by classroom teachers in providing for the needs of gifted and talented students in regular classroom settings (Whitton, 1995, p. 69).

The teachers, with whom I worked, responded enthusiastically to the suggestion of an Early Intervention Program for the identified potentially gifted children in their classrooms. They considered that they would be readily able to incorporate such a program into their daily planning, not jeopardising the instruction for the majority, but rather enhancing the experiences and outcomes for all children. Thus the program outline that follows is based on two main premises: the needs of gifted students and the ease of implementation for the classroom.

CLASSROOM STRATEGIES

i) An Effective Reading Program for Early Grades

According to Johnson and Pearson:

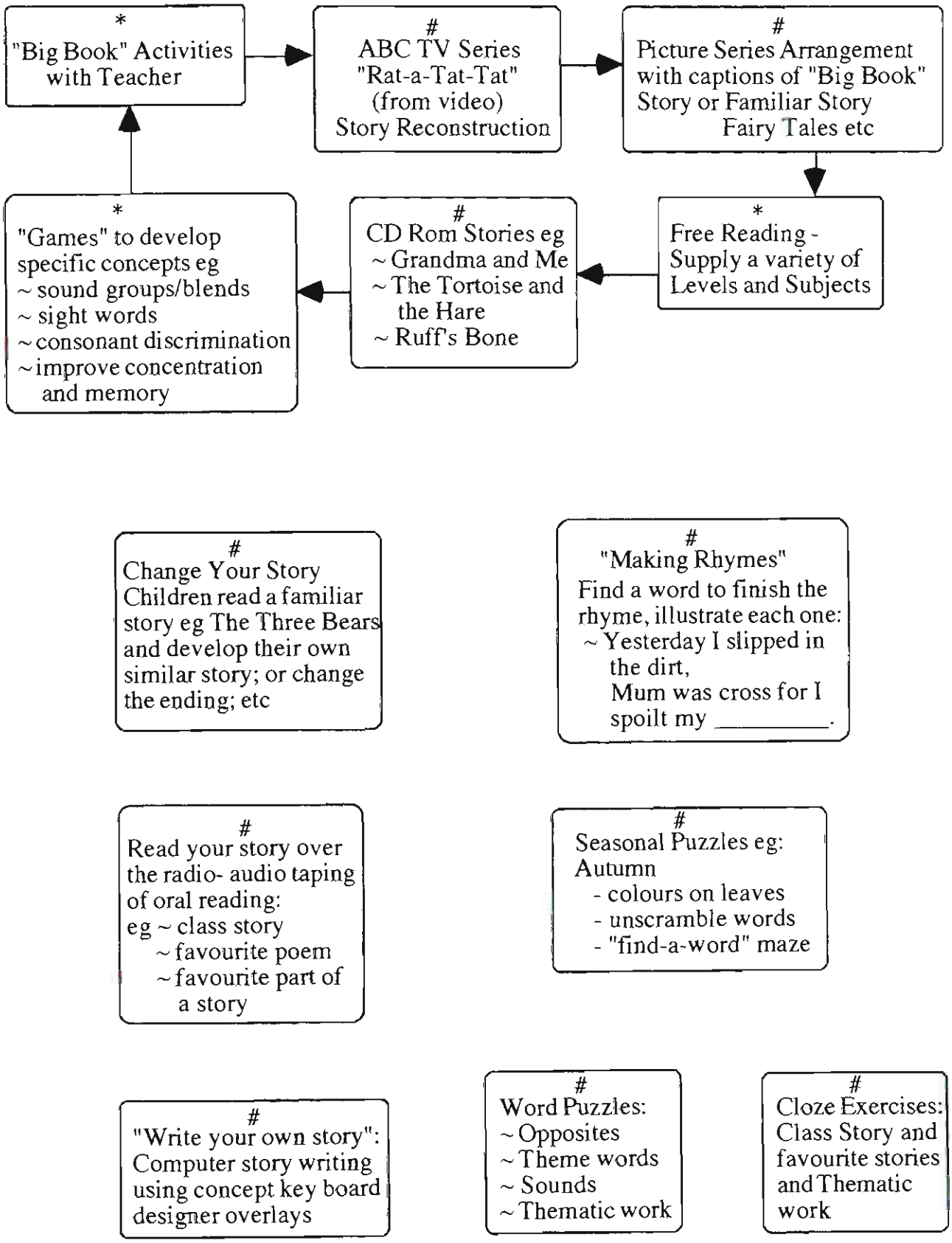
> Teachers of reading have two basic tasks related to vocabulary development and word identification, both of which are important. They are: 1. to teach vocabulary directly, and
> 2. to teach language generalisations and reading strategies which children may use themselves to increase their reading vocabularies and comprehend printed texts (Johnson & Pearson, 1978, p. 2).

Reading Comprehension must "involve language, motivation, perception, concept development" (Pearson & Johnson, 1978, p. 8), prediction, role play and dramatisation, which will encourage creativity as it reinforces structure of written texts. While traditional basal reading programs have failed to meet the needs of many young gifted children, from literature-rich backgrounds, for children from more deprived backgrounds these schemes can certainly be used innovatively by teachers to establish basic rich vocabulary, and enable the child to rapidly develop literacy strategies. When such

competencies are demonstrated, the teacher will then have the opportunity to replace this traditional approach (which may be required for a large part of instructional time for the majority of developing readers within the classroom) with alternate reading activities, and appropriate instructional materials. "One of the most significant purposes of teaching reading is to generate a love of literature in children" (Winebrenner, 1992, p.84). The more these young gifted children can become involved in the organisation of their own reading program, the much easier it will be for the teacher to involve these children in quality learning outcomes.

Using a combination of Pre-Test and Reading Profile methods, it will take a relatively small amount of time to establish the level of competence acquired by each child on the class basal scheme. Where difficulties are noted (and you will find that these become fewer as you progress through the scheme) games such as 'Bingo' - for words or sounds - 'Find a Word Mazes', 'Pyramids', 'Billy Camper', 'Wiggle Track', 'Splash' (Nicolson, 1981, p. 3) can be implemented readily to reinforce the vocabulary/structures to be mastered. Where it is felt desirable for each new book within a progressive class program to be treated by whole class activities, these young more able readers can then participate in their own negotiated program while 'waiting' for the class to complete necessary activities.

Another classroom strategy for developing an effective reading program is the establishment of Reading Activity Centres. These centres can be part of the whole class program, most effectively incorporated into the instructional program on a 'rotating basis' as shown in Figure 5.1.



* These centres should remain at all times.
# Alternative ideas for centres

Figure 5.1. Reading Activity Centres.

This type of instruction could be effectively used for at least two sessions each week, structured on a group-work format of co-operative or ability-based groups according to the teacher's desired outcomes for all students. It is suggested that a maximum of six centres be in operation at any one time, allowing groups of 4 - 5 children to work together. These groups may be of a mixed ability or similar ability structure, and can also be altered on a regular basis. To ensure that all aspects of language are treated, the centres can be varied with each new 'Class Book' - probably each fortnight. Much of the materials, which will rely on teacher resourcefulness and careful planning, as well as commercially supplied equipment, can be re-used for different themes throughout the year to support effective language acquisition. However, the greatest benefit of these centres is that they are always available and can be utilised (and provide choice) by the able readers as part of their alternative program, whenever time permits.

Many of these minority group gifted children have had little or no prior experience of children's literature. Teacher reading (and just as importantly, story telling) is an integral part of an effective reading program. Multiple skills as depicted in Figure 5.2 can be taught, based on the story read (or told) by the teacher.

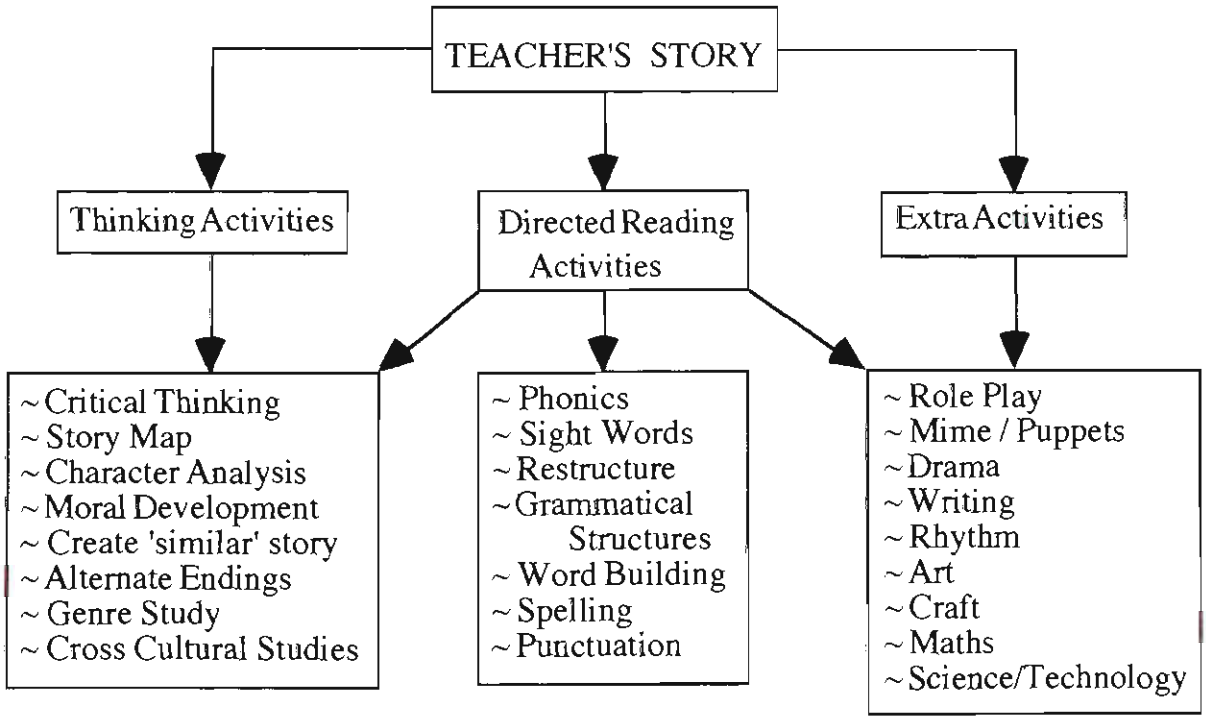


Figure 5.2. Acquisition of skills from teacher's reading.

It would be erroneous of us to ignore the wealth of resources that often lie undiscovered in an environment comprised of many ethnic groups - not excluding our own Aboriginal groups. These people may be invited into the classroom where they can take an active role in the real-world aspect of the Reading Instruction program. The librarian or local community centre's personnel will also be aware of local authors, poets and story-tellers and should be consulted to assist teachers in planning these valuable and enriching literary experiences. The sharing of their stories will convey a valuing of each child's minority background, a sense of pride in their own particular heritage replacing the embarrassment that they often bring to the classroom experience.

In many instances, human resources are also available - Ethnic Aides, Community Language Teachers within the school, or parents and community members highly skilled in their own written language - to scribe the children's stories into the various languages, so that the stories may be taken home as part of the class's Home Reading Program and thus establish the invaluable parent/child shared reading time.

Local Artists may also be available to illustrate the stories. Over the years, the school can build up its own very comprehensive English/Community Language reading scheme/library resource.

As the more able readers gradually, or even quickly, become evident in the Kindergarten /Year 1 classroom, another very positive inclusion of an effective reading program should be the use of Mentors. The gifted readers will often develop a selective area of literature for their own individualised program. It could be in the area of Science and Technology, Environmental Issues, Animals, Music or Exploration - especially Space. The list, like the interests of these children is diverse and limitless. Whatever these interest areas might be, there are mentors available for them. The University — especially the Education Faculty, who train teachers, as well as other faculties — the local Secondary School,

Musical and Performing Arts Centres, Art and Craft Specialists, local Sporting Institutes and Teams, or simply older children in Years 5 and 6 who are gifted in the particular domain, can be utilised as part of a Mentoring Program to further enhance a child's performance, not just in reading but in discovering and highlighting a previously hidden talent as depicted in Table 5.1.

Table 5.1 School Mentoring Resources accumulated over time

Domain	Mentor	Appropriate Texts
1. Linguistic Intelligence	School Librarian Local Author	Books Newspaper/Journal Articles
2. Logical / Mathematical Intelligence	High School Math's Teacher High School Students in Advanced Math's Programs Faculty of Mathematics	
3. Spatial Intelligence	Local Architects and Draughtsmen BHP Personnel	2D / 3D Jigsaw Puzzles Tangrams Model Construction from Pictorial Instructions
4. Musical Intelligence	Conservatorium of Music Personnel Performing Arts Centre	Musical Dramas for Young Students; eg "The Elephant Child"; "The Wallaby Track"; "Chime Away" etc.
5.Bodily - Kinaesthetic Intelligence	Local Sporting Teams Institute of Sport Faculty of Education (PE) PCY Clubs	
6. Interpersonal Intelligence	Co-operative Learning Strategies involving personnel inside and outside the classroom	
7. Intrapersonal Intelligence	Public Speaking/Community Services Personnel	

Reading is the key to unlock limitless resources and ideas available to gifted children. It is our duty to identify as early as possible, those youngsters who seem to have this potential and then put into place, as will probably be necessary with children from minority groups, a program that will allow curriculum differentiation for these students as they operate as part of the regular class, but require alternative materials and experiences. A few ideas for curriculum differentiation in reading have been outlined and as teachers become more aware of the emerging abilities of these children in their classes, the more comprehensive and challenging the special alternative programs will be. Some helpful references are included in Appendix 8.

"The classroom environment is an effective atmosphere in which the teacher can initiate and reinforce children's learning" (Massam & Kulik, 1987, p. 4). It is important, then, for reading instruction as with all learning areas, that the classroom is seen by the child as interesting, stimulating and challenging.

Well-planned and challenging activities in Mathematics will also allow the teacher the opportunity to discover those children who demonstrate a particular potential in this domain. Tertini reinforces this idea in stating:

> Helping children to develop an understanding of mathematics can be a challenging and stimulating experience. The ideas that children discover and learn during their pre-school and early years at school are the ideas they will use throughout their lives (Tertini, 1986, p. 5).

As with Reading, many schools decide upon a commercially-produced Mathematics Program, and like Reading, there will be the need for an alternative program for some children.

Unlike reading, which is based on standard English in both oral and written forms, mathematics can have a broader base. The number system used in our various cultural groups is reasonably standard, and most children enter school with some basic number concepts well developed. Again it relies on the astute insight of the teacher to recognise

children who appear to have a potential for giftedness in mathematics and then provide an appropriate and challenging program for them.

Most commercially-produced Mathematics Texts provide a very comprehensive overview for each topic to be treated for example, "Developing the Topic" in *Young Australia Maths*. Within this overview, the aims and activities are set out sequentially and the processes involved are usually well documented, sometimes offering suggestions for class organisation. It is therefore a relatively easy task for the teacher to place mathematically-gifted children at their appropriate starting level and then add, where possible, extra challenges for those who complete their tasks quickly and accurately.

These extra challenges can be effectively achieved in the classroom by establishing a Mathematics Interest Centre, where the children can engage in mathematical activities either individually or as part of a small group. These activities can be stimulating extensions of the class concept being treated, revision of already treated concepts, new challenges or a combination of all of these. New equipment or games can be made available for the children to explore as well as class-made mathematics books for quiet reading and reflecting. What is important is that because of the nature of the users, it must be enjoyable, stimulating and frequently changed. Like reading, it is essential that the teacher uses a 'Pre-Test' and a 'Mathematics Profile' method to ensure children have mastered the set topic and are being catered for at an appropriately challenging level. Within these centres, it is also essential to give the children the opportunity to investigate realistic problem situations which will empower them to measure, generalise, understand and predict aspects of a rapidly changing and increasingly complex world.

Because the children of this particular study are from homes where English may not be the same standard as that used by the school, it is essential that the mathematically gifted children are included in all class activities that involve language, explanations and directions.

Suggested references that will assist choices for a class mathematical program and develop an Alternative Individualised Program are included in Appendix 8.

It is a reasonably manageable task for the teacher to establish such alternative programs as have been described for Reading and Mathematics, but it is essential to keep in mind all learning is established on a language background, and for these potentially gifted but standard-school-language-deprived children, the greater their exposure and immersion in the language of learning, the more quickly opportunities will be opened up for them. "If a child is potentially gifted, language is the road map to the world within the person; it is the framework of thought, the currency of discourse; it is the shortest distance to some things the child wants; it is the lens through which perceptions are focused; it is the foundation of understanding" (Smutny, 1995, p.42). Based on this premise, you may find that many teachers prefer to organise their instruction within the parameters of a Whole Language Classroom: a thematic approach to teaching and learning.

Language is the essence of human communication, and knowing a language involves the ability to create meaning and understand the meaning created by others. Thus, while children learn language, they develop an appreciation that it is used to express and understand meanings. Through interacting with their environment, children will develop language and cognitive skills concurrently. They will learn that language changes according to its function, purpose, audience and context, and its use involves listening speaking, reading and writing. "Signs and words serve children first and foremost as a means of social contact with other people. The cognitive and communicative forms of language then become the basis of a new and superior form of activity in children" (Vygotsky, 1978, p. 28).

By the time children enter school, they have a well developed oral language consisting of extensive vocabulary and grammatical structures, a basis on which they will extend their understandings of language and develop further oracy and literacy skills. "The most

significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development converge" (Vygotsky, 1978, p. 24).

For the child whose language is not the standard English of the school, whether they were born in Australia or overseas, it must be recognised that the skills they possess should provide a sound basis on which the new classroom language - standard English - will be built.

> Language learning is part of the child's total development. The integration of language learning activities is recommended, as language learning cannot be separated effectively into discrete lesson segments. These activities arise from the child's personal experiences in the whole field of the curriculum (NSW Dept of Education, 1974, in Multicultural Education Policy, 1983, p. 3).

Language learning is most effective when students are motivated by a need to communicate within a meaningful context. Thematic Units encourage this natural and enthusiastic participation.

Thematic Unit programming will best meet the needs of all the children within a given class, especially those who appear potentially gifted. The thematic unit will enable not only the development of a topic across all content areas of the curriculum, but allow for postholing (in-depth investigation of subjects, ideas or problems) and for telescoping (accelerated and independent study). Thematic planning readily facilitates the opportunity to cater for the variety of learning styles of the children, encouraging them to experiment and make choices.

In developing the teaching/learning activities comprising a unit, the incorporation of Bloom's Taxonomy of Learning will ensure that the able children are being fully extended and challenged as they work alongside less able peers. In order to make these classroom activities throughout a Thematic Unit accessible to, and enriching for, students

from limited English backgrounds, it might also be beneficial to consider the following, to ensure that all children attain their full learning potential:

* using concrete materials at all levels

* providing real experiences through excursions and field trips

* inviting classroom visitors

* using visual stimuli such as pictures, videos, charts, CD ROMs and real life objects to enrich understanding

* providing vicarious experiences through books and television programs to broaden children's experiences

* using many different pair and group activities which will involve the children in a variety of language/learning situations

* ensuring resources used are of a sufficiently wide range to cater for all abilities, interests and language competence, and encourage creativity in all the children.

If individual potential is to be fostered effectively, all children must have equal opportunities for the development of their own interests and abilities. Equal opportunity requires not only equal access to all activities in the regular school environment but also consideration of, and catering for, differences, for example: sex, race, cultural background or perceived gifted academic potential, in such a way that each child is encouraged and enabled to participate in those activities and so broaden his or her interests, knowledge and skills.

These children, on entering the kindergarten classroom, are familiar with various aspects of a technological society. Technological advances are occurring almost daily and they will be moving into a world in which technological literacy will be essential. Thus all characteristics that early education endeavours to foster in children will be significant in assisting them to cope with the changes ahead. These characteristics include:

* problem-solving ability

* independence and self-direction

* self-esteem and personal confidence
* open-mindedness
* a spirit of enquiry, and
* creativity.

Gifted children, as do all children, need to be challenged by activities that enable them to operate cognitively and affectively at complex levels of thought and feelings. They must be challenged through opportunities for divergent production, working in individual and group situations to demonstrate these outcomes. They must be challenged through experiences and discussions which promote understanding of human value systems and allow them to form inter-relationships across all bodies of knowledge. They especially need to be challenged in their area/s of strengths and interest, accelerating the pace and depth of content, while exposing them to new areas of learning within and without the school structure. They need to be given the opportunity to apply their cumulative abilities into solutions of the real-world problems confronting them.

As early as Kindergarten / Year 1 these challenges can be realised by teaching the children to undertake real research through learning and applying the steps of the Information Skills Process. Besides the basic skills of literacy required for valuable research, they will be able to master, given all the appropriate criteria, such skills as critical and creative thinking, problem solving, decision-making, leadership and even coping with exceptionalities. This premise was strongly reinforced by Kirk in "Scan", which stated:

> Today, we tend to think that information is the right of all people in most societies. But, in fact, throughout history there has been no steady increase in the proportion of the population which has access to information. There is a danger that large quantities of information will once again only be available to small groups within our society, unless everyone is given the opportunity to learn information retrieval techniques (Kirk, 1988, p. i).

Information literacy has been defined by the Information Industry Association in the US as "the techniques and skills for using information tools in moulding solutions to

problems" which may be broadly expressed as "the ability to effectively access and evaluate information for a given need" (Kirk, 1988, p. i).

These information literacy skills can be achieved to varying degrees by children in grades as early as Year 1 and Year 2 - and even earlier with gifted children, using the Information Skills Process. This Process can best be described as an integrated set of skills and knowledge that is needs-driven.

'Information Skills' is a broad term which includes study skills, research skills, and communication skills - any skill which is used in locating, acquiring, analysing, interpreting, communicating and presenting information. They are skills that are common to all curricula areas and have always been included in some form as part of educational programs. Development in educational theory, however, would now propose that these skills be taught in the content of the classroom program and form an integral part of the skills continuum.

All educational aims statements, worldwide, emphasise the student as an individual and unique learner and thus teachers must cater for all individual differences when planning, implementing and evaluating classroom programs. They are encouraged to design programs that will foster students' individuality and independence in learning. Information Skills, because it assumes that learners are active participants in their own educational outcomes, foster these learning skills in students so that a sound foundation for quality lifelong learning is established. It is a process that creates effective implementation of preferred learning styles for all students, as the teacher builds on each student's present level of proficiency, and systematically develops strategies to assist each child become an independent learner who is able to participate fully in an 'Information Society'.

It must be emphasised that the school is only a small source of educational experiences that will equip a child for adult life. The Information Skills Process, when taught slowly

and meaningfully will provide the real world strategies that can readily be incorporated into any area of curricula, at any stage of development, in the school years and beyond. "Searching newspaper advertisements and deciding which second-hand bike to buy is an example of a recreational information activity which contributes to the development of such skills and attitudes. A current affairs unit taught at school using information from newspapers, provides planned and guided development of expertise in using information" (NSW Dept of Education, 1987, p. 3).

The school, however, is responsible for setting the groundwork for information literacy characteristics in students by incorporating into classroom instruction, specific inquiry or information skills.

Information Skills can be divided into two basic groups:

a) skills concerned with locating information, and

b) skills concerned with understanding and using this information.

The Information Skills Process is made up of six sequential steps (although these often appear to be closely interwoven, and backward / forward movements necessarily occur). These six process steps are summarised as follows:

1) Defining: "What do I really want to find out?"

2) Locating: "Where can I find all the information I will need to answer my question or solve my problem?"

3) Selecting: "From all of this information that I now have, what do I really need to use? What is relevant? What can be eliminated?"

4) Organising: "How can I best use this information? How can I arrange it all so it will be effective and accurate?"

5) Presenting: "How can I present this information so that it will have the greatest impact on my audience? Should I use just one format, or can I use a combination of methods for presentation of my finished product?"

6) Assessing: "What did I learn from this? Did I really answer my question in the best possible way? Did I omit any vital information? What skills did I learn from each step of the process? Could I have done anything better?"

Because every child is using his / her own 'brand' of information skills every day as he / she functions in the normal classroom environment, teachers must be aware of this information process and become actively involved as learning facilitators, so that the rate and quality of learning will be greatly increased. More importantly, this process can be very effectively taught to children as young as 5 - 6 years of age.

Classroom implementation of Information Skills also allows for the practical incorporation of Gardner's Multiple Intelligences Theory. Children can respond to their own individual intelligence/s and learning style as they involve themselves in the research process, culminating in "Presentation". The processes are summarised in Figure 5.3.

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Figure 5.3 Using the multiple intelligences summary wheel (Smutny, 1995, p. 29).

Information Skills demand at least a competent level of reading ability to allow the child to pursue interests individually, and work at an enriched level of class instructional content. It is essential, then, that the children have first been exposed to, and gained success in a sound reading / language program.

In order to attain high academic achievement, it is essential to concentrate on the total development of the child, which can be accomplished by the addition of an effective health / gross motor skills program.

Through a gross motor program, the child should develop physical, personal and social competencies which will lead to a positive self image and a confident approach to, and successful participation in, his or her particular learning situation and educational environment. The program should develop controlled, co-ordinated, rhythmic locomotor movement skills through walking, running, hopping, skipping, dance and creative movement. It should provide the opportunity for development of the concepts: right and left, direction, speed, body image and awareness, paths through space, level and quality movement. The program should also endeavour to improve general body co-ordination, hand-eye and foot-eye co-ordination, static and dynamic balance, flexibility, agility, strength and endurance.

An effective gross motor program for Kindergarten and Year 1 should consist of two directed lessons each week which incorporate introductory activities followed by group skills treatments, where attention is focused on developing the very basic skills through to the more complex skills. These two directed lessons should be supplemented by a games lesson, a health lesson, and at least half an hour devoted to singing games.

This program also encourages a strong school-parent partnership. The more helpers that can be utilised in the program, the more effective it will be. Timetabling the gross motor lessons at the beginning of the day will allow parents, who have brought their young

children to school, to stay on and become an integral part of this essential aspect of the child's development.

Because these children usually enter school lacking many of the educational experiences already enjoyed by their Australian counterparts, it is essential that, wherever possible, excursions and special visits are included as part of the instructional program. Something as basic as a day at the beach (where all sites in this study are within 2 kilometres of one of our lovely beaches), exploring the rock pools or creative sand-play are assumed by staff to be a part of the family traditions, has not been experienced. This may be due to employment commitments (parents working extra shifts to increase income), lack of transport (either no car owned by the family, or if the father is at work, mother does not drive), or simply the parents do not realise that these outings are a vital component of early childhood development. Whatever the reason, it is now the responsibility of the school to compensate for lack of past experiences.

Over the past two decades the Federal Government has granted many millions of dollars to schools as part of the Disadvantaged Schools Program (now Equity Program). The schools with large minority group populations, especially of low socio-economic status, have received very large amounts of money, which enables them to effectively support such 'Experiences' Programs.

Finally, it is imperative that creativity is encouraged. Creativity is related to individuality and enables the child to use innate abilities and learning gained from past experiences, to find new solutions to problems, or to express views and feelings uniquely in any of a number of ways, verbal and non-verbal. The creative process usually results in the production of something new and original, but in the case of many youngsters, it may also represent a new way of producing something familiar. It can probably best be described as original ideas and new perspectives involving imagination, innovation and invention. It may not be an original creation - but it will be for the particular child.

Creativity can be fostered through play, where the child expresses his or her own responses to the environment, while drawing on the imagination as he or she interacts with equipment, materials and other children in novel ways and a variety of roles. Teachers should ensure that children are allowed time, given equipment that can be used in a variety of ways, and are provided with a rich background of experiences relevant to different cultural backgrounds as they play.

Music and movement also offer a wide variety of opportunities for children to interpret and react in their own individual manner. Poems, rhymes and stories from the Reading / Language program can readily be utilised into music and movement.

Incorporating divergent thinking skills into classroom activities will also enhance creativity. Young children expect an answer to a question, but when the teacher's response is another thought-provoking question, the child is required to produce more than one solution to a problem, which will assist to develop higher-level thinking skills.

Implementation of open-ended activities using materials such as paint, clay, sand, water, wood - or whatever 'bits and pieces' can be collected - will foster the development of creativity. Being involved in creative activity is satisfying, while enhancing self esteem. Such activities provide an excellent opportunity to individualise teaching, allowing each child to learn in his or her own way, at his or her level and pace. These activities are easily incorporated into all the described programs: Reading / Language; Mathematics; Information Skills and Gross Motor Skills.

Through inclusion of the described programs into regular classroom planning, not only will potential giftedness (Logical / Mathematical / Verbal Linguistic) be enhanced, but teachers will be able to readily identify children demonstrating giftedness in the other

domains as proposed by Gardner: Visual / Spatial, Bodily / Kinaesthetic, Musical / Rhythmic, Interpersonal and Intrapersonal.

TEACHER DEVELOPMENT AND SUPPORT

i) Establishing a School Definition of Gifted Education

From the research findings, it was obvious that the notion of 'giftedness' varied considerably from school to school, and even from teacher to teacher within one school staff. To enable the establishment of an effective school policy, where potentially gifted youngsters will be identified as early as possible, and appropriate learning programs set in place, it is essential that the whole school develops its definition of 'giftedness' that will form the basic guidelines for effective practices.

Over many years, 'giftedness' has conveyed the idea of brilliance or genius, and usually in the domains of language and/or logic and mathematics. This concept was reinforced by the fact that to determine which children gained places in special programs, only quantitative measures of IQ Score, standardised test results or a combination of these were used. Very little credence was given to other characteristics of the individual.

However, Gagné (1985) broadened the notion that "giftedness is conceptualised as outstanding ability in a number of domains and talent as exceptional performance in various domain-related fields" and proposed the differentiated model of giftedness and talent, depicted in Figure 2.3.

Gardner (1983), in his theory of Multiple Intelligences also "challenges the prevailing concept of intelligence as a single general capacity which equips its possessor to deal more or less effectively with virtually any situation" (Blythe & Gardner, 1990, p. 33).

He, too, described intelligence as a much broader concept than the narrow test-defined view of the psychometric approach. He proposed that intelligence is "the ability to solve problems, or to create products, that are valued within one or more cultural settings" (Gardner, 1983, p.x) and consists of at least seven kinds of intelligences as depicted in Figure 5.4.

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Figure 5.4 Gardner's Multiple Intelligences (Vialle & Perry, 1995, p.12)

Most teachers are willing to adopt this broader definition, finding it much more palatable, as it is more inclusive of children rather than exclusive. To establish this essential and agreed upon School Definition of Staff Development - Package 1 (Appendix 8) will be used.

ii) Identification of Gifted Children

The focus of this research study was to identify young potentially gifted children in academic domains, but over time it became evident that it is almost impossible to extrapolate isolated features of intelligence. The seven intelligences as defined by Gardner (1983) in his MI Theory, were so interwoven in the children who presented as

potentially gifted, that it became evident that an essential aspect of the identification procedure for teachers must incorporate an awareness of all domains, in order to include rather than exclude a particular child in classroom, school or system-wide special programs.

It is also essential that teachers realise that identification is not a 'one - off' incidence, using a single identification instrument. Fig. 5.5 shows how a child can be identified at any point in time within a cycle of events.

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Figure 5.5 Identifying giftedness at any point in time (Gifted and Talented Modules, South Coast Region, 1993, p.3303).

Although I do not promote the idea of Check List use, for teachers who have had little exposure and certainly no pre-service or in-service training in the field of giftedness, some of the reliable and proven checklists would certainly assist in the identification process. Teachers will be trained in Identification as set out in Staff Development - Package 2 (see Appendix 8).

iii) Curriculum Differentiation and Classroom Strategies

At age 5 or 6, it is very difficult to identify potentially gifted children, and this difficulty is compounded when we add the variables of no, or little, standard English competency, cultural differences and / or poverty. It is essential then, that teachers of these early childhood school years are always astute, ready to acknowledge signs, and then put into place classroom instruction that will allow these characteristics to develop and flourish. A guide for steps needed to be considered in order to develop effective classroom planning is shown in Figure 5.6.

The programs have already been clearly defined, but it is essential that teachers are assisted to take the theory and put it into effective workable programs within the classroom environment. This assistance will take the form as detailed in Staff Development - Package 3 (see Appendix 8).

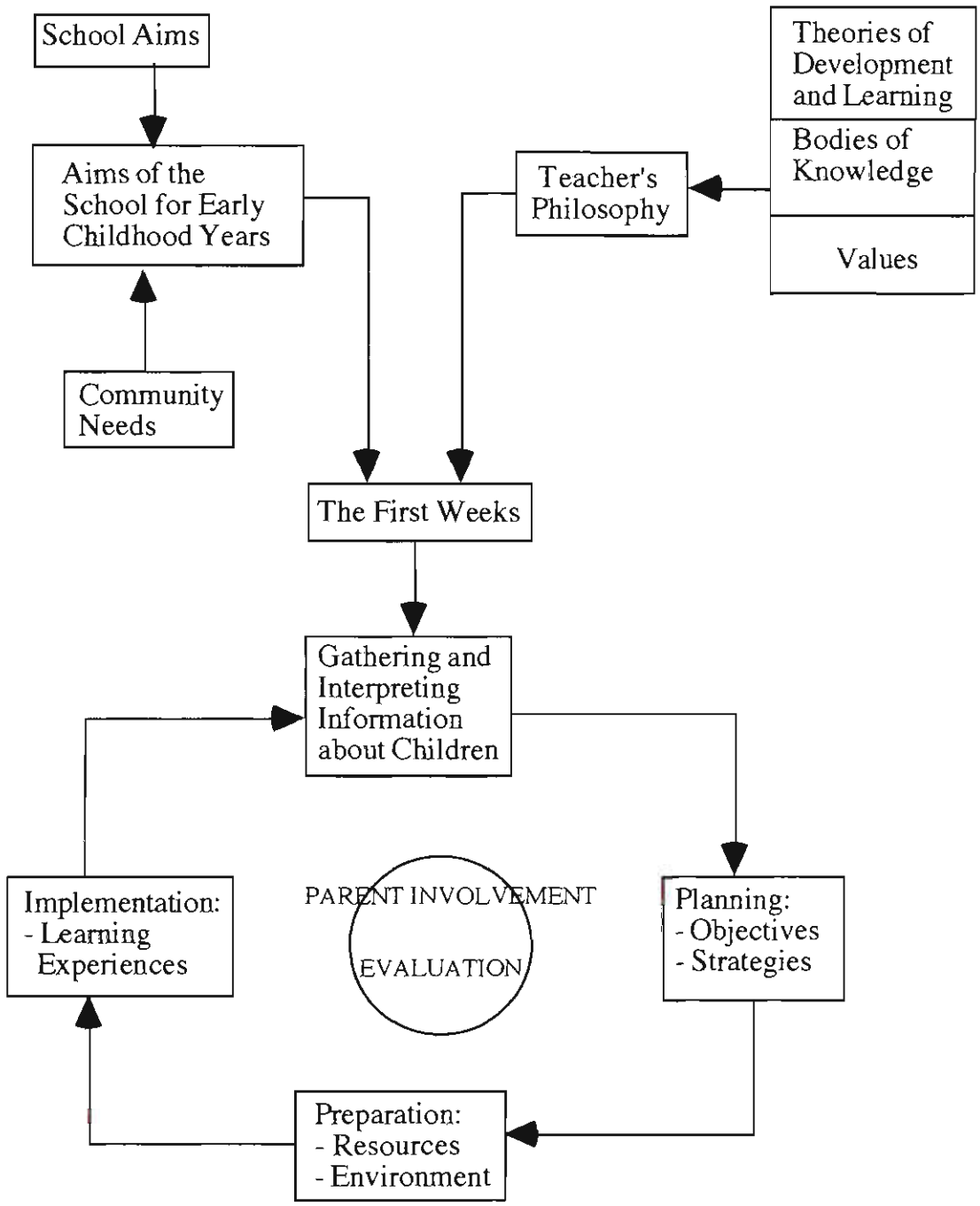

Figure 5.6 Design for effective classroom planning

iv) Drawing It All Together

The amount of information that has been covered over the time allocated to these specific Staff Development sessions has been enormous, and for many, overwhelming. It is thus suggested that this follow-up module be treated later in the year - a minimum of five weeks after initial training. This will allow time for teachers to reflect, trial and sort out any difficulties that may have arisen. It will allow for clarification of any problem areas of previously treated materials and a sharing time of successes.

It is also possible that from a collaborative whole-school decision, the classroom aspects - identification procedures, curriculum differentiation and effective instructional strategies - will be developed and supported as a continuum of teaching / learning experiences and outcomes, and evaluation strategies from Kindergarten to Year 6. This is emphasised by Peters who contends that:

> Schools should ensure that the gifts and talents of all students are recognised, nurtured and developed. This is particularly relevant for gifted and talented students in the early childhood years, as it is then that patterns of future learning behaviours and attitudes are established. If the abilities of the gifted and talented are identified at an early age and appropriate programs are provided, these students will pursue with creativity and confidence, and will feel encouraged to achieve at, the highest level of excellence (Peters, 1995, PR. 34).

Such a decision will also be influenced by valuable parental input and reflect the uniqueness of each school, its "priorities, population and individual learning needs as documented in the school development plan" (Peters, 1995, PR. 34). Gifted and Talented educational decisions must be seen as an inclusion within the total plan and not as an afterthought that complies with the State / System directives. A model for developing such a school-based program to address a Gifted and Talented policy is demonstrated in Figure 5.7.

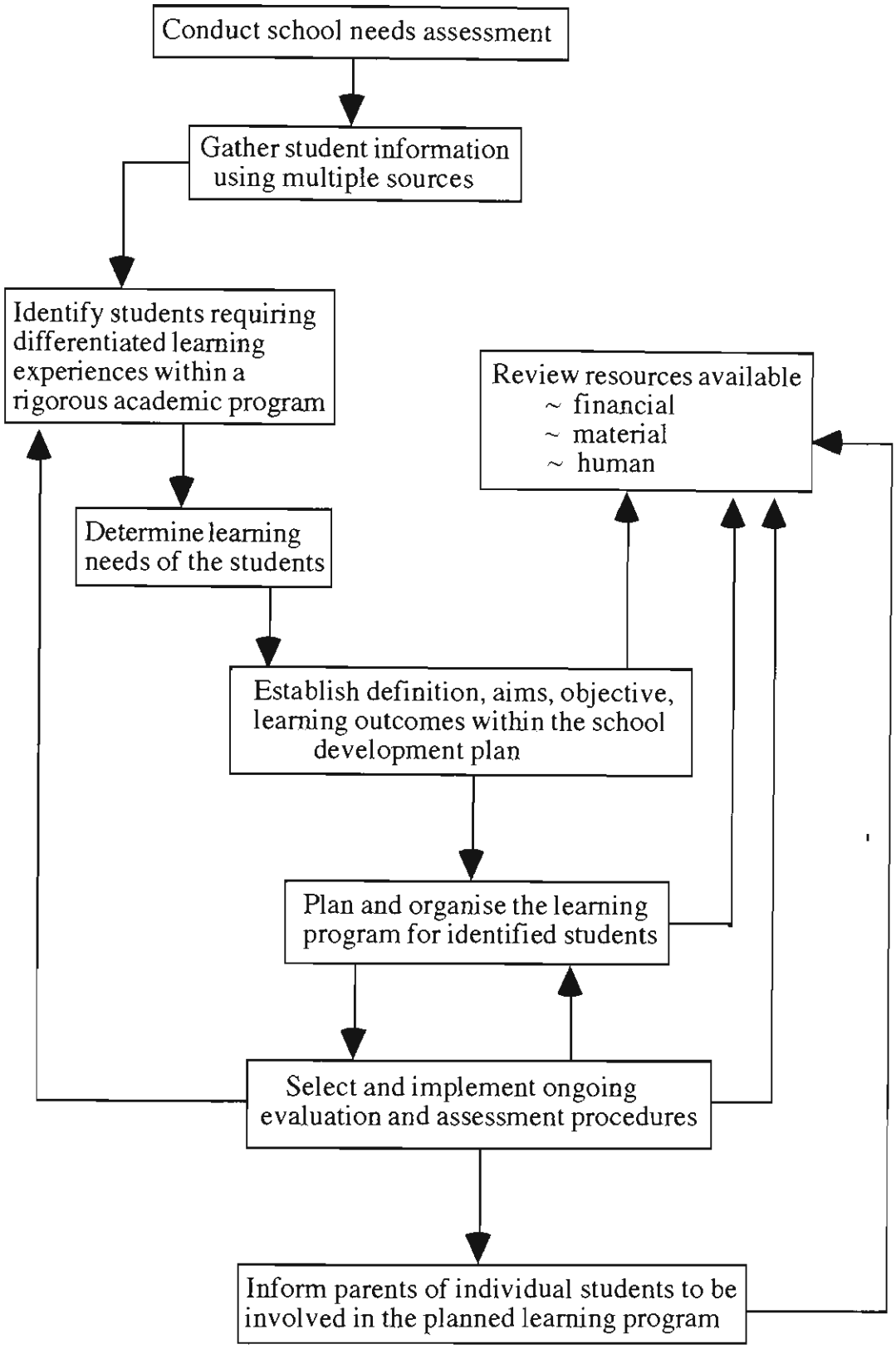

Figure 5.7. Developing a school-based program for gifted students.

PARENT GUIDANCE AND SUPPORT

Because an issue such as a gifted education policy is critical to the whole school community, it is advisable that parents be invited to attend the Staff Development Sessions when and where it is determined to be beneficial, for example establishing identification procedures; classroom educational strategies that can be facilitated through parent follow-up activities and conducting a school needs assessment. Dwyer emphasises this idea by stating:

> Training should be directed at both parents and teachers and focus on the development and focus on the development of partnership skills. Programs or workshops can be conducted separately, but some of the best training programs have parents and teachers learning together. Two-way communication is evident when parents feel comfortable in coming to the school, sharing ideas and voicing concerns. Staff welcome parent input and use it. There is a climate of openness where information is provided, responses are invited and differences of opinion are respected (Dwyer, 1994, p. 37).

Some parents find it difficult, almost impossible, to voice to the school, concerns they have about their children's education. This situation is further exacerbated for the parents who have a lack of knowledge of the school system and / or poor English proficiency. It is essential that from the first introduction to the school, which is usually enrolling their children for Kindergarten, the parents see the school as a totally involved learning community. The school will provide a caring and stimulating environment where children while learning, care about each other, challenge one another and live fully as children as they grow slowly towards adulthood. This will be actualised only when home and school are closely interwoven.

The environment in which the child is reared has great influence on his / her development and largely determines the child's ability to both function effectively and benefit from experiences beyond that environment, namely the school and community. A close relationship between the home and the school must surely enhance the development of the child.

This bond is strengthened and school achievement is increased when parents become actively involved in the education of their child. Parents guide and influence most of the child's early learning experiences and have a right to continue this involvement. Ways need to be developed to enable this to happen.

With gifted children, it is essential that the parents become involved in the total educational program as a great deal of the enrichment and individualised programs for their children depend upon their participation as stated by Moon:

> Research has shown that families of gifted children have unique dynamics that can affect various aspects of family life (Hakney, 1981; Keirouz, 1991; Moon, Jurich & Feldhusen, 1993, in Moon, 1995, p. 198).

In many instances it will be as a result of a parent's comment during conversation that the teacher will be made aware of a child's capabilities, which may not have been evident in the classroom to that point in time. According to Peters:

> Research indicates that, particularly in the early years of schooling, parents are considerably more effective in identifying gifted students than are teachers (Baldwin, 1962; Ciha, Harris Hoffman and Potter, 1974; Jacobs, 1971). Parents of a child who exhibits precocious development are aware that their child is unusually advanced well before that child reaches school age. Therefore parents are a valuable resource in assisting in early identification of gifted and talented students (Peters, 1995, ID. 4).

Alternatively, it may come quite as a shock for a parent to be told that a child is potentially gifted. This can result in a state of confusion and upset for the parent, particularly for parents from minority groups who are not completely at ease with our educational system. However, by developing into our organisation / structure true parent involvement, these dilemmas will be quickly and totally allayed. A working partnership between home and school is essential to ensure that each child attains his / her full learning potential.

From the results of this study it was encouraging to see that parents already have an in-depth understanding of giftedness and the various ways it manifests itself in children. What was also evident from interviews was the fact that these same parents did not know what to do, what practical assistance they could give their children, who were deemed potentially gifted. Davey encourages us in stating:

> In days gone by, only those children who excelled on the academic front were thought to have above average intelligence. The 'brainy' students were those who scored highly in the IQ tests and performed well at school.
> The good news is that other forms of intelligence and learning styles have now been given recognition and, in many instances, educators are adapting their teaching methods to cater for a wider range of talents.
> However, it is difficult to cater to all children within time and curriculum restrictions. Parents can help by considering where their children's talents lie.
> By thinking about and observing your child, you will be able to assess which of the following intelligences she possesses and respond accordingly (Davey, 1996, p. 60).

This collaborative approach to education is further supported by a study carried out by researchers from Purdue University (West Lafayette, Indiana, USA) over a three year period. They found that enrichment programs for gifted children "have subtle effects on the family systems of participating students that can benefit the development of gifted and talented children" (Moon, 1995, p.206). This is depicted in Figure 5.8.

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Figure 5.8. Causal network: Effects of the enrichment program (Moon, 1995, p. 206).

It is the responsibility of educators to advise, assist and work in collaboration with parents to encourage and develop this intelligence. To achieve these goals, Parent Guidance and Support sessions must be an integral part of the whole-school development plan (see Appendix 8).

CONCLUSION

"Much education today is monumentally ineffective. All too often, we are giving young people cut flowers when we should be teaching them to grow their own plants" (Gardner, in Sawyer, 1993, p.1). Results of this study revealed the need that teachers of children in the early years of schooling, namely Kindergarten and Year 1, not only be

aware of the characteristics that signify giftedness, but be able to implement effective classroom instructional strategies that will meet the needs of these children. These processes become even more complicated when the children are from minority groups and display signs of potential giftedness in very different ways from their counterparts of middle-class, 'Australian' backgrounds.

Culturally diverse gifted children will often display characteristics quite contrary to the expected 'norm'. They may have been encouraged to be dependent and not question the status quo or presented concepts. Many come from cultural backgrounds that discourage a strongly developed self-concept but encourage a strong sense of gender and family roles. They may possess 'gifts' not recognised in the anglo-Australian culture or even worse, those not fostered in their home culture. Most prevalently, they may have difficulty in speaking or even thinking fluently in English, causing them to feel alienated in school or peer situations. All of these characteristics must be considered in order to make sound educational decisions.

To enhance their potential in every possible way, three major factors must be considered as critical: multicultural awareness; flexibility in school decision-making and classroom instruction; and full parental involvement in the total education process. Only when these three criteria have been fully considered and accepted, can an effective, total-school curriculum be designed which will meet the needs of all children within the school, especially the gifted children from minority groups.

Where schools want to implement such a program as soon as possible, teacher training with emphasis on multicultural and gifted issues, must be a pre- and continuing requisite. It will be necessary, therefore, for the schools to include in their own Total School Development Plans, ongoing Staff Development and Parent Support modules. Both teachers and parents will need to demonstrate flexibility, creativity and potential

facilitation to encourage and provide positive educational opportunities and experiences for these children.

It is also essential that the teachers involved in the programs examine their attitudes and expectations concerning gifted students from minority backgrounds, and develop appropriate skills for effective communication with these culturally diverse students and their families. They will need to acquire knowledge of the respective cultures and (from the beginning of the school years) avoid any situations which may be culturally sensitive. Braggett (1992) suggests:

> A difficulty of even greater complexity relates to program provision ... we have (then) to devise a curriculum that is appropriate to their educational needs.... This issue is wider than the school itself, reaching to a societal recognition of cultural differences and an acceptance of different values in terms of equality. It will be a long road to travel before this form of gifted provision will be widely accepted and it presupposes an attitude change on the part of the dominant culture and an equally trusting response on the part of the minority groups (Braggett, 1992, p. 12).

Teachers must be aware and appreciative of the language that each child brings with him/herself to the classroom. Trueba emphasised that "without language, culture cannot be acquired effectively nor can it be expressed and transmitted. Without culture, language cannot exist. This linkage between language and culture in the process of knowledge acquisition, as well as in the context of the whole development of young humans, cannot be stressed enough" (Trueba, 1989, p.29). Language is a result of experience. Culturally diverse languages are different but not inferior or inadequate and using them as foundations for good English instruction and acquisition will readily facilitate this essential process. Care must be taken to avoid confusing limitations in standard English with limitations in higher academic and cognitive abilities.

The curriculum developed by the school is based on an organised set of purposeful experiences in school, at home and in the community which assists the student to develop his/her full potential (Sato, 1978). Therefore curriculum which is designed to meet the needs of gifted students must encourage the students to pursue topics in depth and at a pace commensurate with each individual's ability and interest. This will encompass

activities being initiated that diverge from the structural framework of most classroom instruction. It will require the students to pose their own questions, experience emotional involvement with a project based on their own choice and interest, learn the skills, methodology and discipline involved in intellectual and creative pursuits and experience the use of all the senses necessary for creative productions.

Teachers must be given the skills to differentiate the normal class curriculum. This can be very easily achieved by integrating multi-disciplines into an area of study — using a thematic approach — and developing independent, self-directed research skills and methods — Information Skills Process.

Within the classroom, instructional methods should integrate a variety of strategies to develop thinking skills for all children. Co-operative learning strategies, holistic approaches and other activities should be included (Sawyer, Rakow & Bermúdez, 1991). These classroom strategies must include a variety of grouping methods. Although most of the gifted children in school will be in regular mainstream classes, for a positive stimulus for interaction, it is advisable that for at least part of the school day or week, these children are grouped together. This will provide them with opportunities to explore areas which enrich and enhance their educational programs. "A content mastery/enrichment program which allows active participation in the mainstream setting as well as individualized or small group support in a learning resource center may offer students the opportunity for minimal exclusion from the mainstream classroom while providing needed external support" (Sawyer, 1993, p. 4).

The strength of any sound program in the education system, and particularly during the early childhood years, includes the active involvement of the parents working in harmony with the school. Research findings (Bermúdez & Rakow, 1990; Brandt, 1989; Levenstein, 1974) report that when parents from culturally diverse groups are involved in school activities, children's academic achievement improves, general school behaviour

improves, achievement is sustained and language performance is significantly increased. However, like teachers, parents must be taught how to work effectively with their children in order to optimise their learning potential. It is critical that a parent education and support component is also built into the Total School Development Plan.

CHAPTER 6

CONCLUSIONS AND IMPLICATIONS

> If the artist does not perfect a new vision in his process of doing, he acts mechanically and repeats some old model fixed like a blueprint in his mind (Dewey, 1934, p.50).

In this chapter, the threads of all that has gone before will be pulled together into a coherent theory, which can be argued, has evolved from the data gathered from many sources over time.

The results of this research will be discussed in light of the research questions and their implications for classrooms and further research in the area of gifted education, and in particular, for gifted children from culturally diverse minority groups.

The announcement in the 'Sydney Morning Herald' read:

> It is remarkable that not withstanding the large expenditure incurred by the Department of Education on the training of delinquent children, children of low mentality and physically handicapped children, the child of superior ability has been neglected. If in the best interests of the State and the individual, one class of child merits special consideration, it is probably the child of superior ability.

This statement was made by the Minister of Education, in the Sydney Morning Herald, 27th June, 1931. Six decades later, in November, 1990, the NSW State Minister for Education, Ms Virginia Chadwick released her government's revised 'gifted and talented policy for students'. This stated: "Gifted and talented students have been the forgotten people in our schools" (sic) (Education Reform Act, 1990).

From data gathered throughout this research study, this has certainly been the sentiment showed by many. If this is an accurate assessment, teachers need to ensure that they have effective programs in place that will indeed enhance the educational opportunities for these

children, while at the same time ensuring that teachers and parents are provided with adequate support, training and guidance to change the situation.

Not only is there a general concern for the lack of provisions for the education of gifted children, but when analyses are made of 'special' classes and programs that are in operation, an even greater concern is apparent. The number of children from the culturally diverse and low socioeconomic status groups is far below a true representation of the numbers of these children in schools today.

The selection process for these programs relies heavily on results of intelligence and standardised test scores, which are culturally and language biased, with specific emphasis on verbal and mathematical skills — those areas viewed as the measure of school success. Current theories of intelligence, now strongly supported by many researchers and practitioners, view intelligence as multifaceted, and 'something' that can be enhanced by an educationally rich and supportive environment. In the light of this research and to enable all children equity of educational opportunity, it is essential that gifted children from all backgrounds be 'discovered' and nurtured for the benefit of not only the individual, but for our future society.

This latter concern formed the basis for this research study. It included the input of all facets of the entire school community, which must be considered when the school assumes the responsibility for identification and policy implementation to meet the needs of its gifted students. This is shown in Figure 6.1

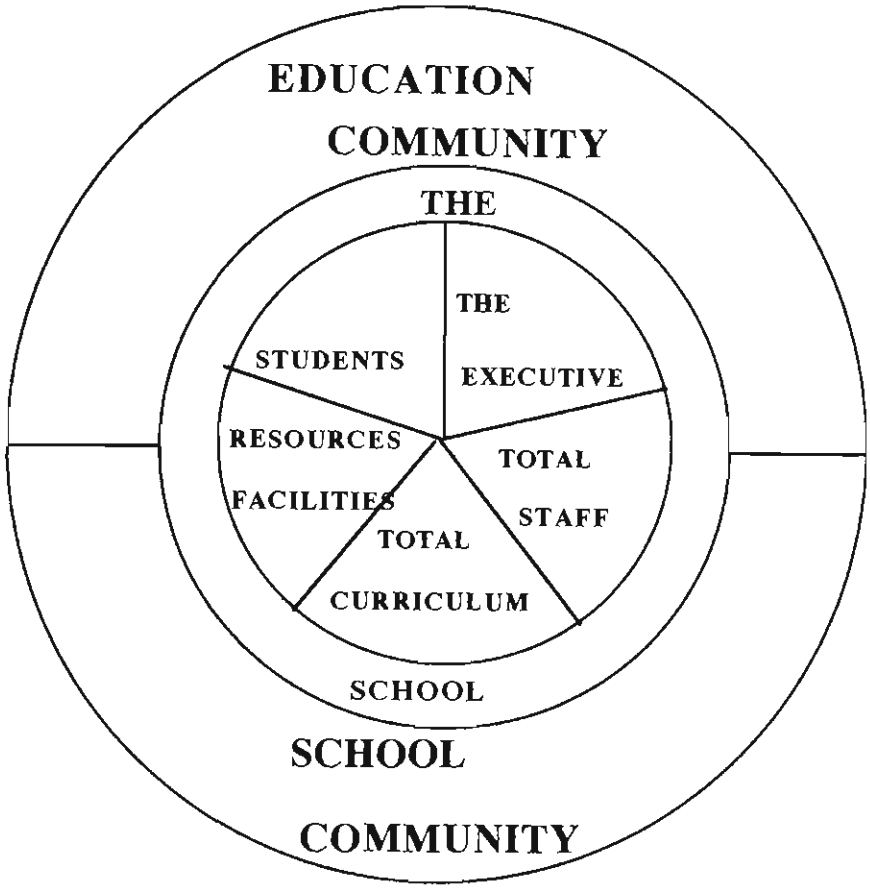

Figure 6.1. Whole school community input to develop an effective policy for gifted education

The premises that guided the research can be summarised as:

1) Gifted children in early childhood years, from disadvantaged backgrounds, are rarely identified. Identification is an ongoing process, not a one-off decision, and is best achieved through planned group consultation.

2) Their special needs must be realised and met.

3) Attending to their individual differences is of paramount importance.

4) Constant teacher and parent education and support is required.

5) General and specific abilities must be addressed - a classroom instructional program; and

6) The school must implement an ongoing policy which must be evaluated and modified regularly to meet the needs of changing staff and children. This plan is described in Figure 6.2.

To gain the necessary data from all stakeholders, a variety of data collection procedures was employed: questionnaires, interviews, observations, audio-taping, photography, examination of documents and records and individual 'testing' of participants. With the exception of the Parent Questionnaires, which returned very high response rates to both formats (Parent Questionnaire 1 = 73.5%; Parent Questionnaire 2 = 86.5%), all other data were collected through direct interaction. This allowed for immediate clarification of any misunderstandings and further explanations, and certainly assisted in establishing a good rapport with everyone involved in the research.

RESULTS OF THE RESEARCH

From the outset, it was necessary to establish a construct of giftedness that was held by both parents and teachers. This would later form the foundation structure for the design of the total school policy. From the first Parent Questionnaires, which were distributed to all parents of Kindergarten and Year 1 children at all three sites (n = 200), the second questionnaires which were issued to parents of children included the research sample (n = 52), and the parent interviews (again only parents of children in the research sample, n = 52), the main characteristics that they saw as the indicators of giftedness were language ability and curiosity (64%). Not one response mentioned IQ or standardised test results.

The results of the Teacher Questionnaire (n = 50), the Saturday School Teachers Interviews (n = 7), although highlighting the importance of language abilities, were frequently compartmentalised into more clearly defined categories: reading ability; oral competency; vocabulary, (61% average). However, 75% of teachers nominated advanced academic

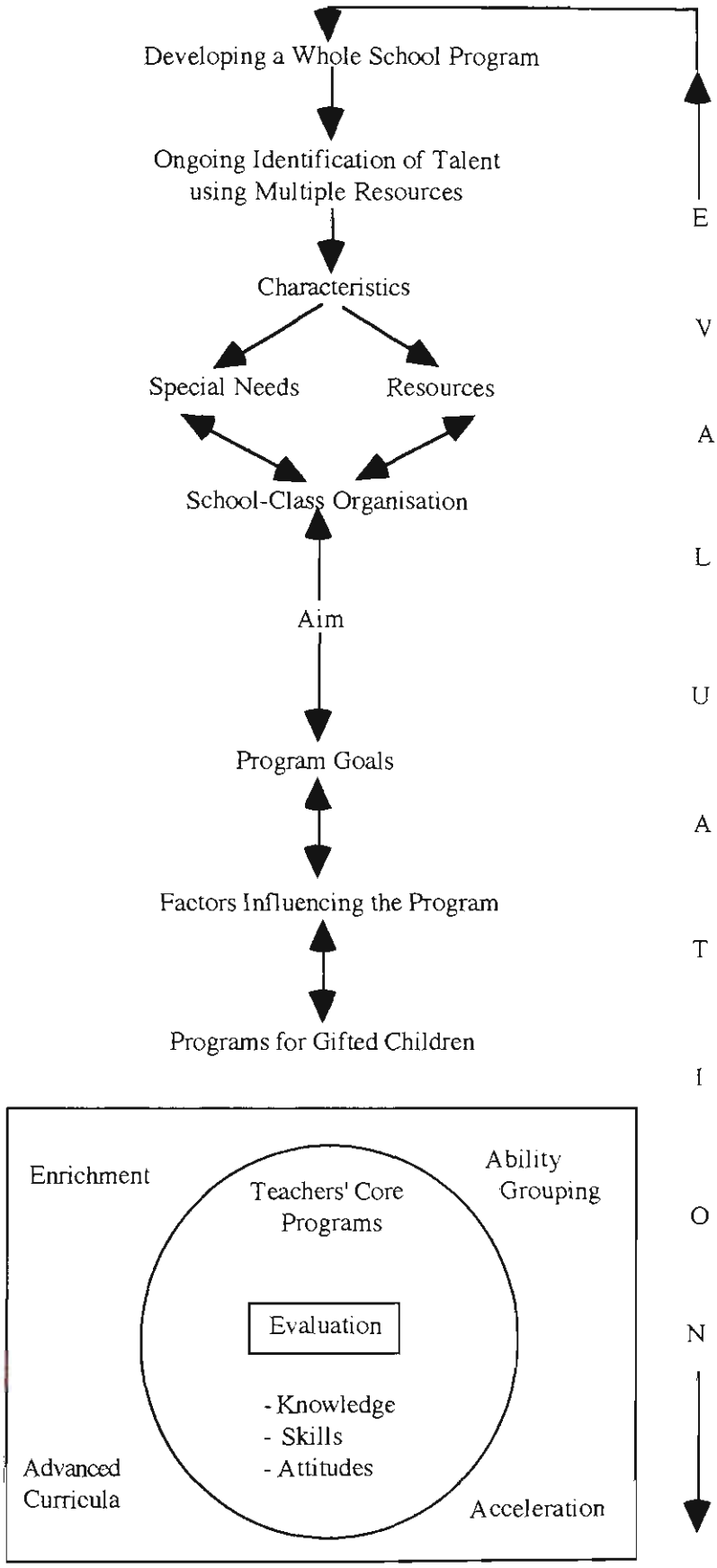

Figure 6.2. Model for the development of a whole school gifted program.

achievement as an indicator of giftedness and it is assumed that language ability would be highly rated in this assessment.

Whether or not it was the nature of the school environments, only 5% of teachers and no parents nominated IQ results as an indicator of giftedness. The surprisingly low response for mathematical abilities (28%) from the first questionnaire, was not expected. The only exception here was the response from the Arabic and Turkish parents who rated mathematics quite highly. The teacher questionnaire also scored mathematics low (40%), but like linguistic competencies, probably included it in Advanced Academic Ability, which rated a very high 82%. However, a high proportion (71%) of the Saturday School teachers ranked mathematical intelligence quite highly.

From the results of the IPMAI, mathematics results were very strong for almost all participants (n = 49/52) in each of the four tests: (M.1 = 4.7; M.2 = 4.8; M.3 = 4.2; M.4 = 4.1 average results), which indicates high mathematical achievement. This is possibly the result of all parents teaching basic counting and number understandings to their pre-school children, as well as the television programs for small children which usually include some form of counting and number recognition. These results were supported from parent interviews when 94% discussed their children's mathematical knowledge. However, it appears that parents assume that mathematics is a generally understood concept by all children, and not necessarily an indicator of giftedness.

It was obvious from analysis of all responses, that there was a marked shift from the components of the traditional paradigms and teachers and parents were aware that new paradigms are needed that respond to the current theories of intelligence. They were aware of the varied manifestations in different children, allowing for a much more comprehensive picture of the individual with the emergence of other intelligences nominated by Gardner (1983) and Sternberg (1985).

It was important to note that although it was carefully explained to all staff at the outset, that for the purpose of this research the terms 'gifted' and 'talented' were being used synonymously, most teachers (92%) responded to Question 1 of the Teachers Questionnaire: "*What is your definition of i)* ***'gifted'?*** *ii)* ***'talented'?***" by providing different definitions for each concept. Contradictions in these definitions also emerged, for example in Q.1., Rapid Learning Capacity, was nominated by 40%, and when asked to rank characteristics of giftedness (Q.2.), 84% placed it as very high. Curiosity was similarly ranked as an identifiable behaviour of giftedness, (16% in Q.1., and 54% in Q.2.). The fact that teachers did not view '*Making relationships/Widely informed*' and '*Long attention span/ Good memory/Retentive*' as high indicators, caused some concern and would need to be addressed in staff development in-servicing. This is supported by Milner Davis, when she stated that:

> One of the major problems is that without good training in identifying gifted children, teachers tend to nominate the neat conformist when asked to identify bright kids in their classroom.... Sometimes brightness is disguised in the most unlikely ways, and teachers need to be trained to identify and work with these children. Teachers need support to do this (Milner Davis in Hughes, 1991, pp. 21-22).

When comparing the parent and staff responses it became obvious that while parents had moved towards a new paradigm for describing 'giftedness', teachers were still very much entrenched in the 'traditional paradigm'.

While it is understood that not all gifted children will display the same behavioural characteristics, it is essential that teachers and parents are aware of the large variety of traits that will assist in the identification and subsequent effective classroom instruction and home support for all gifted children. It is also essential that teachers are aware of how these characteristics are manifested in specific behaviours of children from diverse cultural backgrounds, which may be quite different from the 'middle-class Australian child'. Arroyo and Sternberg suggest that:

> Among disadvantaged children, giftedness is reflected in qualities in addition to and sometimes other than measurable intellectual capacity. It includes behaviors that allow disadvantaged students to

> cope with social and economic deprivation. Because these adaptive behaviors are themselves governed by cognitive abilities that constitute intelligent behavior, it is reasonable to assume that the behavioral characteristics displayed by some disadvantaged children are reflective of giftedness (Arroyo & Sternberg, 1993, in Frasier & Passow, 1994, p. 30).

Results of the IPMAI, as an indicator of academic giftedness in young culturally diverse children will enable teachers to identify specific strengths within the linguistic and mathematics curriculum areas and subsequently develop class/individual intervention programs that will enhance the educational opportunities for these children. However, because the test is administered on a one-to-one basis, a great deal more information can be extrapolated and acted upon in the development of exemplary classroom instruction. It is strongly recommended that the IPMAI is given to all children within a specific group. This will ensure that no-one is erroneously overlooked for a special program or enrichment activities. It is also essential that the IPMAI be used as just one assessment tool from multiple techniques employed for an identification process. This is supported by Clark, when she states:

> As a human being develops higher levels of functioning, many unique patterns and traits emerge. For that reason, the education of groups of gifted individuals is not an easy task. They are not an homogeneous group. As we look more closely at the characteristics and need of gifted learners we will realise the real difficulties of accurate identification (Clark, 1983, p. 26).

One very simple method, but probably the most accurate assessment tool when dealing with identification of these children, is Portfolio Assessment, incorporating an anecdotal record - Teacher Journal. From the cumulative work samples and classroom/playground observations, valuable data can be obtained that will provide a record over time, of emerging characteristics of giftedness. Although the response from teachers involved in this research study, was very positive towards Portfolio Assessment as a valuable tool in the assessment process (78%), it was discovered that only a small number of staff (45%) actually kept some form of these records. This issue will be further addressed as part of staff development (see Appendix 8).

Many of the children (an approximate 44%, as this question was not directly posed in either parent questionnaire or interview; it was gained from analysis of the audio-tapes when the children 'chatted' about themselves) entered school lacking the usual family experiences that teachers take for granted as part of the 'normal upbringing of children'. As well as the school ensuring that compensation be made by including excursions, field-trips and special visits into their unit planning, it is recommended that parents are encouraged to expose their children to as wide a variety of experiences and activities as is possible during their early school years. This will involve thoughtful professional instruction, good suggestions and ideas to explore all available possibilities, and most importantly that parents see themselves as role models to interact with their children, so that these youngsters can share the excitement of discovery. This will be addressed as part of whole school development - parent support and guidance (see Appendix 8).

CLASSROOM IMPLICATIONS

The new American Federal report (1993) discussing the status of gifted education proposed that within classrooms throughout the US. instructional programs provided by teachers are not challenging gifted students. It states that:

> The regular school curriculum does not challenge gifted students;
> Most academically talented students have already mastered up to one-half of the required curriculum offered to them in elementary school;
> Classroom teachers do little to accommodate the different learning needs of gifted children;
> Most specialised programs are available only a few hours a week; and
> Students talented in the arts are offered few challenging opportunities (1993, p. 19, in Whitton, 1995, p. 70).

This is also true for the classrooms from which the children in this study came - and undoubtedly true for the majority of classrooms throughout New South Wales.

The NSW Government (1991) endorsed the following principles to guide school level of action in the education of the gifted, highlighting that:

* Each child has the right to realise his/her full potential.

* It is the responsibility of each school to provide opportunities for students who display a wide range of gifts.

* Each school will need to utilise all available resources to provide appropriate and challenging programs of high educational quality for gifted children.

* Parents should be actively involved in the educational programs, and

* Authorities are responsible for providing adequate training and professional development opportunities and support for all personnel (p. 4).

Unfortunately there is little evidence of these principles reflected in school policies and more importantly teachers' classroom planning. While most teachers were attempting some form of 'enrichment' program within their own classrooms, there appears to be a lack of total school commitment or direction.

This responsibility will extend to the development of teacher awareness of the problems and needs of talented children and of the provisions that can be made for their development. The main areas of immediate need and actions are identification procedures, staff/class allocation, staff development to ensure effective curricula differentiation and classroom practices and the establishment of an ongoing intervention program.

Identification of young gifted children is not an easy task, and this is compounded when these children fall into the culturally and economically diverse groups. Their cultural background may mean that they do not have much interaction with their teacher and peers within the classroom setting, because this type of behaviour is not encouraged in their own culture. They definitely have a language barrier, which often leads to extreme shyness and embarrassment and hinders active participation. It is also likely that these children will express their own specific interests in a subject quite differently from the way middle-class English speakers do.

It is imperative that the teacher is aware of these 'barriers' and watchful for 'gifted signs' that occur, and "unlike the fixed nature of identifying gifted students at a particular point in time...instruction enables staff to redefine their judgements about individual students based on observation of their ability to meet the cognitive demands of the program over time" (Johnson, Starnes, Gregory & Blaylock, 1988, P. 418, in Frasier & Passow, 1994, p. 57). The identification process must be organised, school-wide, dynamic, continuous and justifiable.

Within-school staff allocation must also be carefully considered. While there are certain characteristics common to all good teachers, the teacher whose class includes gifted children must be willing and able to explore and develop those gifts. The teacher who must be a facilitator of learning experiences that will maximise the child's potential, will be adequately equipped to employ a variety of teaching strategies. He/She must be creative and well organised, so that teaching methods and planned experiences are not only consistent with the school curricular aims and objectives, but are tailored to meet the needs, interests and capabilities of individual children, particularly gifted children. Smith (1990) reinforces this notion when he states:

> Since this is not an easy task, even for the very best teachers, it is important that the teacher do a bit of soul-searching before agreeing to work with the gifted young child. The teacher should consider if he deeply enjoys and values gifted children, and if he feels competent to meet their needs. He must also determine if he has an adequate knowledge base for the task, both in professional terms and in terms of his general knowledge. The gifted young child will require him to be flexible and adaptable as well as knowledgeable (Smith, 1990, p. 23).

Because most of our gifted children are within regular classrooms it is essential that emphasis is placed on professional development. Therefore staff support forms an integral part of the annual Total School Development Plan.

It is not only the aim of identifying these young gifted children and placing them in appropriate learning programs, it is essential that an early intervention program is

established and maintained to ensure that these children continue to develop their potential. Without the extra support, and at times 'hole-plugging', where knowledge gaps become evident, these children will fail to attain what teachers realise is easily within their capabilities. They will require a differentiated educational program which must be fully integrated into the larger perspective of the school curriculum. "It must involve the child as an integral member of his school community while still serving to meet his special learning needs ... balancing independence with interdependence ... and consider the child as a whole individual, a child first, gifted second with a unique combination of strengths and weaknesses" (Smith, 1990, p. 83).

To be confident and competent with this demand, teachers will need expertise in developing a differentiated curriculum and sound knowledge of 'options' available to them to incorporate a flexible structure of organisation that will probably involve and need support of other staff members and resources.

One option that has been used to a very limited degree in the past, but is now beginning to be accepted, is that of mentorship. Students who display an outstanding ability in one defined area of the curriculum, will benefit greatly from interaction with an older person who has expertise in this field. That person may be from the local community, from industrial or business enterprise, from available tertiary institutions, from neighbouring high schools, from hospitals and medical subsidiaries, from the arts, or simply a child from a higher grade. "Mentors provide students with an advanced level of knowledge, skill and expertise and an introduction to the real world of the particular art, profession or skill. They are able to guide students, assist in the development of their talent and offer a critical evaluation of their progress" (Peters, 1995, PR. 26).

Whatever the decisions made by the school to establish and implement a differentiated instructional program for gifted children, it is essential that it is tailored to meet its own special needs. Southern upholds this idea in stating:

> Early identification and suitable programming is therefore important. Pre-schools and primary schools need to be aware of identification measures that are both subjective...and objective.... They need to provide an educational programme that may involve some curriculum differentiation which allows for extra depth of study and possibly acceleration either in a particular subject or by skipping a year, level or more (Southern, 1991, p. 13).

To make this impact on the educational potential of young gifted children, particularly from diverse cultural and economic backgrounds it is essential that each school should endeavour to:

1) Develop an effective whole school policy for gifted education which is inclusive of parents and community members.

2) Through a carefully articulated staff development program, empower all staff members to implement the classroom processes required to meet the needs of gifted children. These would include an understanding of giftedness as it is manifested in young children, identification procedures, whole-school classroom strategies, and an effective early intervention program.

3) Encourage teachers with financial and time support to participate in outside-school professional development, for example post graduate university courses, in-servicing conducted by neighbouring schools, regional offices and special organisations.

4) Build into the whole-school plan a parent support and guidance structure. With the establishment of a strong parent-school relationship, the school will benefit from the parents' knowledge of their children and can then plan a program that will enhance the child's development not only academically in young children, but physically, socially and emotionally so that a positive self-concept will be encouraged which will enable his/her potential to be fulfilled.

IMPLICATIONS FOR FUTURE RESEARCH

Although there have been major changes in the perception of intelligence, particularly during the past two decades, many educators continue to determine giftedness, especially in children, using the instrument designed for this purpose in the early part of this century. When these instruments are inappropriate for a large proportion of the population, the end product will continue to be underrepresentation of children from minority groups included in special programs for the gifted. In enrolments for 1994 within the South Coast Region of NSW, statistics showed that at the Primary Level, no Aboriginal children and three NESB children (5.7%), gained places offered in special classes. At the Secondary Level (Year 7), again no Aboriginal children and nine NESB children (7.6%) gained placements (see Appendix 6). Maker (1996) suggests as a reason for these occurrences:

> In the selection of students for special educational programs, the use of intelligence tests as presently constructed and normed, does not result in an equitable representation of ethnic, cultural and linguistic minority groups in such programs (Maker, 1996, p. 42).

Since the middle of this century many researchers and practitioners have endeavoured to bring about changes to the identification procedures, but universally this has not eventuated. Frasier and Passow (1994) argue that:

> While there are certainly cultural differences among various racial and ethnic minority groups, to advocate alternative strategies and procedures is to demean and patronize those gifted; if provided with equal access to enriched learning experiences, they will exhibit the same talent potential. On the other hand, there are those who argue equally strongly that differences in cultural values dictate different approaches to identification and development of talent potential and even searching for different talents (Frasier & Passow, 1994, p. 19).

To gain equity of opportunity in the educational arena for all children, regardless of race, religion, gender or economic status, a new paradigm of giftedness must be developed, and strategies implemented to ensure inclusion of all who would qualify. Changes are needed in 'beliefs' of giftedness held by educators and the community at large, identification practices and curricular and instructional programs.

One of the limitations of this study was that it involved only three school sites within the South Coast Region of NSW. Although these sites were representative of the minority groups nominated for this research it is recommended that the IPMAI be trialled across a much broader sample for validation.

Throughout this research study it was quite obvious that the majority of parents saw giftedness in children manifested in many ways and incorporating Gardner's (1983) Multiple Intelligences Theory. However, this was not consistent with the position of the teachers. To ensure that there is a staff commitment to the notion of gifted education, it is recommended that extensive research be carried out within NSW to ascertain teachers' philosophies within this field. Results of such research could be subsequently integrated into effective initial teacher training and purposeful in-service modules. Many teachers need to be exposed to current literature pertaining to intelligence and giftedness. This reading would need to be supplemented by ongoing in-servicing and support.

It is therefore recommended that the areas of pre-service and in-service training be subjected to extensive research. It is essential that university personnel and educational consultants are effectively trained to assist within-school staff, either at individual sites or where needs are similar, in clusters, to fully develop school services for gifted children. Lanier et al endorses this premise when stating:

> [America] worries deeply about its elementary and secondary schools, a concern that ultimately must reflect on the institutions that prepare teachers, administrators, counselors, and others who work in those schools. Much like the nation's automobile industry, university-based education schools long took their markets for granted - - in turn, giving insufficient attention to quality, costs and innovation (Lanier, et al, 1995, p. 5).

Pre-service training of teachers, especially in early childhood and primary areas, should include compulsory units of study on special education — gifted education being one of these strands. It is essential that a much stronger bond is developed between the

University Schools of Education and the schools per se. Education is an expansive and expensive public undertaking and requires broad research studies into the problems of practice. According to Harris:

> The public schools need the aid and collaboration of colleagues from higher education, who regard the schools as professional educators' paramount concern - - and the professional schools need the aid and collaboration of colleagues from elementary and secondary education who value quality educational research and professional education (Lanier, et al, 1995, p. 12).

Although it was stated in the Government Strategy (1991), that "...education authorities have a responsibility to provide training and professional development opportunities in education of gifted and talented students for teachers and other appropriate personnel" (p. 4), funds have not been allocated to provide these essential services.

It is also recommended that extensive research on cultural diversity be undertaken. According to Brown, (1995):

> Teaching and learning, like all human activities are usually culturally specific ... students come from multiple cultures and from homes where the first language of the parents, and often of the children, too, is a language other than English. But cultural uniqueness is not limited to language, though it develops like language, from the time youngsters are born. Children learn continuously at home, in their neighbourhoods, at school, and wherever they happen to be. They acquire funds of knowledge, often culturally specific, from these varied experiences and it is this knowledge that they bring to school, and use in response to demands made upon them.... Their culture is neither right nor wrong; it is simply what it is - and the school must help youngsters learn and develop with and through the cultural meanings that are uniquely theirs (Lanier, et al, 1995, p. 37).

Teachers need to be well-informed about the children they teach, so that the school and the home become a 'united front' educationally.

The three sites within this study together provided participants representative of eleven different ethnic backgrounds. Without a sound knowledge of these cultures — their

similarities and differences — the regular classroom teacher cannot be expected to provide appropriate educational environments and instructional programs that will meet the respective needs of these children, particularly in the early grades.

When these areas of concern are addressed, then, "Theories of intelligence and conceptions of giftedness that address the concerns of educators and the public, and that are more reflective of current perceptions of giftedness...have been developed.... These theories can provide...solutions to the problem of underrepresentation of minority students" (Maker, 1996, p. 43).

CONCLUSION

The major area of concern that drove this research study was the low numbers of culturally diverse and economically disadvantaged students represented in gifted programs. These gifted children are not being provided with the challenge to attain their full potential. From many teacher comments, it was obvious that this concern was quite prevalent amongst concerned educators. Government statutes (1991), set down a time frame for school development and policy implementation for gifted education. However, money, time and personnel with expertise were not provided. 'Change' throughout the school system within the South Coast Region has been minimal. Many of the regional schools' populations are made up of children from diverse cultural backgrounds, which makes early and accurate identification of gifted children a very difficult task.

The IPMAI will assist teachers of the early childhood years to ascertain certain academic skills and knowledge that these children bring to the learning situation. The results can be utilised to guide effective instructional planning across a whole class or for individual children. Used in conjunction with other evaluation strategies, these results can assist

with the development of a whole-school early intervention program. However, it must be stressed that it should not, as is true of any identification instrument, be used in isolation.

> The nature of the problem — the under-development of the talent potential of gifted culturally diverse, economically disadvantaged, and limited English proficient youngsters — is clear. The hopeful aspect is that the elements of needed new paradigms for identifying and nurturing talent potential are becoming equally apparent. In coming to grips with more effective approaches to the identification and development of talents among minorities, the promise is that educators will better understand how to identify and nurture talent potential among all learners (Frasier & Passow, 1994, p. 67).

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APPENDICES

Appendix 1

Parent Questionnaire (No. 1)

Dear Parents.

Would you please answer these questions for Me?

1. How do you know if your little child (2 - 4 years old) is smart?

.....
.....
.....
.....

2. What sort of things does he/she do that are different from things that other children of the same age do?

.....
.....
.....
.....
....

3. What special characteristics would tell you that your little child (before he/she goes to school) is smart and should do well when he/she goes to school?

.....
.....
.....
.....

Thank you for your opinions,

Yvonne Carnellor.

драги родители

ве молам да одговорите на овие пращања.

1. како вие ке знаете дека вашето дете од 2- 4 години старо е бистро?

2. кој вит на работи вашето дете ги изработува поразличито од другите деца од иста возрас ?

3. какви специални карактеристики ви се покажуваат дека вашето дете е бистро и дека ке работи и подобро кога ке почне на училиште?

الأهالي الأعزاء :

أرجو منكم الإجابة على هذه الأسئلة وردها إلى المدرسة.

١- كيف تعرفون أن ولدكم ذات ذكاء فائق وهو ما بين السنتين والأربع سنوات من العمر ؟

٢- ما هي الأشياء التي يقوم بها ولدكم تختلف عن الأشياء التي يقوم بها سائر الأولاد من ذات العمر ؟

٣- ما هي الدلائل التي تدل على ذكاء ولدكم الصغير قبل ذهابه إلى المدرسة. وتدل أيضاً على أنه سيكون من المتفوقين عندما يبدأ المدرسة ؟

Sayın Veliler,

Aşağıdaki soruları lütfen cevaplandırın:

1. Çocuğunuzun (2 ile 4 yaş arasında iken) akıllı olduğunu nasıl anlarsınız?

2. Aynı yaşda olan başka çocuklara bakarak, çocuklarınızın hareketleri nasıl değişiyor?

3. Okula gitmeden önce, çocuğunuzun hangi hareketle çocuğunuzun akıllı olduğunu ve okulda başa- olacağını, gösterir?

Soruları cevaplandırdıktan sonra, çocuğunuzla bu kağıdı okula gönderin. Teşekkür Ederim.

Y. CARNELLOR.

Queridos Padres,

Le agradeceria si me pudieran responder a estas preguntas?

1. Como saben si su hijo pequeño (2-4 anos) es listo?
.....
.....
.....
.....
.....
.....
.....

2. Que cosas suelen hacer el/ella que sean diferentes a las cosas que hagan otros niños de la misma edad?
.....
.....
.....
.....
.....
.....
.....

3. Que caracteristicas especiales les dirian a ustedes que su pequeño (antes que el/ella empiecen el colegio) sera listo y estudioso cuando el/ella vaya al colegio?
.....
.....
.....
.....
.....
.....
.....

Si ahora ustedes no tienen hijos pequeños, tendrian que recordar varios años atras o quizas conozcan a algun pequeño que ustedes crean que es listo.

Quedandole agradecida por sus opiniones,

Yvonne Carnellor

Appendix 2

Parent Questionnaire (No. 2)

Dear .....,

Please tick one answer for each sentence, as you think it best describes your child:

	YES	NO
1.Speaks well in two languages.	____	____
2. Follows 2 and 3 step directions easily and quickly.	____	____
3. Only plays with children of their own age or younger.	____	____
4. Can follow pictures to build things with blocks.	____	____
5. Enjoys new experiences and activities.	____	____
6. Hates to be corrected when mistakes are made.	____	____
7. Is interested in older children's activities.	____	____
8. Asks lots of questions "How..?" "Why..?" etc.	____	____
9. Would rather colour-in than draw own pictures.	____	____
10. Only likes to be in activities and games that are known.	____	____
11. Prefers to be with and talk with older children/adults.	____	____
12. Likes to copy sporting people that they see on TV.	____	____
13. Enjoys performing for anaudience.	____	____

14. Can read simple stories in home language. _____ _____

15. Demands attention for their achievements. _____ _____

16. Resents success of other children. _____ _____

17. Enjoys listening to and joining in musical activities. _____ _____

18. Would rather tell lies than found to be wrong. _____ _____

19. Often asks for help when doing work. _____ _____

20. Can organise friends into a game. _____ _____

21. Uses imagination to play when alone. _____ _____

22. Makes up stories about their own pictures. _____ _____

23. Likes time to play by themselves. _____ _____

24. Can accurately tell about something that has happened. _____ _____

25. Can concentrate on one activity longer than other children. _____ _____

26. Is usually chosen as leader by other children. _____ _____

27. Corrects older children/adults when they think a mistake has been made. _____ _____

28. Likes to be told what to do when they play. _____ _____

29. Has a good sense of humour. _____ _____

30. Always wants to be in charge of any activity. _____ _____

ВЕ МОЛАМ ОБЕЛЖЕТЕ ЕДНА КОЦКА ЗА СЕКОЈА РЕЧЕНИЦА. ДАЛИ МИСЛИТЕ ДЕТЕТО Е БИСТРО , ИТРО КОГА Е ВО ЗАБАВИШТЕ ,КИНДЕГАРДЕН.

1.Збо рува многу добро на двата јазици.
2.Прати 2 и 3 степени на упатствата лесно и брзо.
3. само игра со деца од иста возрас или помали.
можи да прати слики и изгради предмети од блокови.
5. ўживa на нови искуства и активности.
6. Мрази да е корегиран кога направа грешка.
7, Се интересира во активности од постари деца.
8. Поставува многу прашања како, оти, и.т.н.
9. Повеке сака да боји него да црта слики.
10. Сака да биди во активности и игри само кои му се познати.
11,Повеке сака да биде со и да разговара со деца постари од негои со возрасни.
12. Сака да ги копира спортистите кои и гледа на телевизиа.
13. Ужива да се претставува пред публика.
14. Можи да чита лесни прикаски на мајчин јазик.
15. Бара внимание за неговите успеси.
16. Лубомори на успесите од другите деца.
17. Ужива да слуша музика и се придружува во музички активности.
18. Подбро сака да излажи одколку да се најди во грешка.
19. Можи да ги организира другарите во игра.
20. Повеќе пати прашува за помош во време кога извршува некоји работи.
21 Си фантазира кога си игра само - сама.
22. ўживада измислува прикаски околу неговите слики.
23. Посакува вввреме за да си игра сам - сама.
24. Можи правилно да кажи за нешто што веќе се случило.

25. Можи да концетрира подолго на една активност него другите деца.
26. Често пати е одбран за како водач од другите деца.
27. Почесто коректира постари деца и возрасни ако мисли дека грешката е направена.
28. Сакада е натеран што да прави кога тие играат.
29. Хумористично надарено-на.
30. Стално сака да биди главен во сите игри.

الرجاء وضع علامة في المربع المناسب لكل جملة :

هل تعتقدون أن تلميذ صف الحضانة أو الروضة يبرهن عن ذكائه في هذا العمر لأنه :

	نعم	كلا
١- يتكلم لفتين بشكل جيد .	☐	☐
٢- يتبع التعليمات بسرعة وسهولة بعد شرح مرة أو مرتين.	☐	☐
٣- يلعب مع أولاد من عمره أو أصغر .	☐	☐
٤- يقدر على صنع صورة أمامه من الأحجار متبعاً التعليمات المعطاة	☐	☐
٥- يفرح بالنشاطات والتجارب الجديدة .	☐	☐
٦- يكره تصحيح الأخطاء التي يقوم بها .	☐	☐
٧- يحب القيام بنشاطات الأولاد الأكبر منه سناً .	☐	☐
٨- يسأل كثيراً كيف - لماذا إلخ...	☐	☐
٩- يفضل التلوين على الرسم .	☐	☐
١٠- يحب المشاركة في الألعاب والنشاطات التي يعرفها .	☐	☐
١١- يفضل الجلوس والتحدث مع الكبار .	☐	☐
١٢- يحب أن يقلد الرياضيون الذين يراهم على التلفزيون .	☐	☐
١٣- يفرح بالتمثيل أمام المشاهدين .	☐	☐
١٤- يستطيع قراءة قصص مبسطة بلغته .	☐	☐
١٥- يطالب بإنتباه لقاء تفوقه .	☐	☐
١٦- يستاء من نجاح الأولاد الآخرين .	☐	☐
١٧- يلتذ للسماع والمشاركة في النشاطات الموسيقية .	☐	☐
١٨- يفضل الكذب على أن يكون مخطىء .	☐	☐
١٩- يدبر أصدقاء من أجل لعبة .	☐	☐
٢٠- يسأل بإستمرار عن مساعدة عند القيام بأي عمل .	☐	☐

	نعم	كلا
٢١ - يستعمل تخيلاته للعب بأي شيء إذا كان وحده .	☐	☐
٢٢ - يلتذ بخلق قصص حول صوره الخاصة .	☐	☐
٢٣ - يحب اللعب لوحده بعض الأوقات .	☐	☐
٢٤ - يستطيع قول ما يحدث دون خطأ .	☐	☐
٢٥ - يستطيع التركيز في عمل ما مدة أطول من الأولاد الآخرين .	☐	☐
٢٦ - غالباً ما يختاره الأولاد الآخرون رئيساً لهم .	☐	☐
٢٧ - يصحح أخطاء الكبار	☐	☐
٢٨ - يحب أن يقال له ما الذي يجب أن يعمله خلال اللعب .	☐	☐
٢٩ - مرح يحب المزاح .	☐	☐
٣٠ - دائماً يريد أن يكون مسؤولاً عن أي نشاط أو لعبة .	☐	☐

Appendix 3

Staff Questionnaire: (Form 1)

Gifted and Talented Identification - Form 1.

1. What is your definition of the term i) "gifted" .....
.....
.....
.....

ii) "talented" .....
.....
.....
.....

2. Please rank the following characterisics 1 - 9 (1 highest to 9 lowest) as they pertain to academically gifted and talented children.

_____ Large Vocabulary

_____ Original Ideas / Shows Initiative

_____ Long Attention Span / Good Memory / Retentive

_____ Curiosity

_____ Makes Relationships / Widely Informed

_____ Keen Observational Skills

_____ Rapid Learning Capacity

_____ Task Commitment / Motivation

_____ Productive / Critical Thinking

3. Why do you think it is difficult to accurately identify some gifted and talented children?

.....

.....

.....

.....

4. How valuable is Continual Portfolio Assessment in the identification of gifted children?

.....

.....

.....

.....

5. Briefly outline any ways you cater for (or would like to be able to cater for) gifted children in your own classroom. .....

.....

.....

.....

Staff Questionnaire; (Form 2 - Counsellors)

1. What methods do you use to identify children for special academic programs?

.....

.....

.....

.....

2. Please rank the following characteristics 1 - 9 (1 highest to 9 lowest) as they pertain to academically gifted and talented children:

_____ Large Vocabulary

_____ Original Ideas / Shows Initiative

_____ Long Attention Span / Good Memory / Retentive

_____ Curiosity

_____ Makes Relationships / Widely Informed

_____ Keen Observational Skills

_____ Rapid Learning Capacity

_____ Task Commitment / Motivation

_____ Productive / Critical Thinking

3. What difficulties arise in identifying children for special placements? .....

.....

.....

.....

.....

Appendix 4

Parent Interview Schedule

1. Can you tell me about .....'s early years, from babyhood until he/she started school?

2. Do you ever notice that ..... does things differently from your other children (or other children that you know) at the same age?

3. How well does ..... get on with his/her brothers and sisters; cousins; friends?

4. Who does .....prefer to play with? Why do you think that he/she prefers to play with .....?

5. What does ..... really enjoy doing at home or with the family?

6. Is there anything that comes to mind that ..... really dislikes?

7. Are there any special ways that ..... is helped or encouraged with his/her schoolwork at home?

Appendix 5

IPMAI MATRIX

* Enter "Check Mark" in appropriate column:

5) Very High Performance
4) High Performance
3) Average Performance
2) Below Average performance
1) Low Performance

1. Linguistic Intelligence:

Problem Solving:

	5	4	3	2	1	Total
1. Reading of Problem						
2. Comprehension of Problem						
3. Describing "Solution"						
4. Structure & Sequence						
5. Vocabulary & Usage						
6. Manipulative Skills						
7. Creativity / Design						
Sum of checks from each column=		+	+	+	+	/7

Picture Sequence:

	5	4	3	2	1	Total
1. Arrangement						
2. "Story"— Vocabulary & Usage						
3. "Story"— Structure & Sequence						
4. "Story"— Creativity & Imag'n						
Sum of checks from each column=		+	+	+	+	/4

Picture Direction:

	5	4	3	2	1	Total
1. General Vocabulary						
2. Directional Vocabulary						
3. Positional Vocabulary						
4. Size Vocabulary						
5. Shape Vocabulary						
6. Colour Vocabulary						
7. Number Vocabulary						
Sum of checks from each column=		+	+	+	+	/7

2. Logical / Mathematical Intelligence:

Bead Patterns:

	5	4	3	2	1	Total
1. Colour						
2. Colour / Shape						
Sum of checks from each column=		+	+	+	+	/2

Moving Counters:

	5	4	3	2	1	Total
1. Following Directions						
2. Knowledge of Ordinal Numbers						
Sum of checks from each column=		+	+	+	+	/2

Number Recall:

	5	4	3	2	1	Total
1. 2 Digit Number Forwards						
2. 3 Digit Number Forwards						
3. 4 Digit Number Forwards						
4. 2 Digit Number Backwards						
5. 3 Digit Number Backwards						
6. 4 Digit Number Backwards						
Sum of checks from each column=		+	+	+	+	/6

Mathematics Test: (Kindergarten)

	5	4	3	2	1	Total
1. Copy Numerals						
2. Matching Sets						
3. Counting						
4. Writing Numbers from dictation						
5. Counting (write answer)						
6. Making Sets						
7. Number Sequencing						
Sum of checks from each column=		+	+	+	+	/7

Mathematics Test: (Year 1)

	5	4	3	2	1	Total
1. Time						
2. Fractions						
3. Money						
4. Verbal Problems						
5. Processes + & -						
6. Signs + & -						
7. Multiplication						
Sumof checks from each column=		+	+	+	+	/7

Appendix 6

South Coast Regional Statistics (1994).

DAPTO / SHELLHARBOUR CLUSTERS
ACADEMICALLY GIFTED CLASS

NUMBER IN CLASS = 22

IQ RANGE (USING WISC III) = 130 - 150

NESB = 0

ABORIGINAL = 0

FEEDER SCHOOLS: Gerringong = 6
Jamberoo = 2
Minnamurra = 4
Kiama = 2
Mt Brown = 3

Albion Park Rail = 2
Dapto = 1
Mt Warrigal = 1
Albion Park = 1

WOLLONGONG PRIMARY SCHOOL
YEAR 5 / 6 OC CLASS

NUMBER IN CLASS = 29

NESB = 2

ABORIGINAL = 0

SMITHS HILL SELECTIVE HIGH SCHOOL
YEAR 7 - 1994

TOTAL ENROLMENT = 119

NESB = 9

ABORIGINAL = 0

Appendix 7

Staff Interview Items:

1. How many years have you been teaching?

2. Which Teacher Training Course did you complete? Teachers' Certificate; Diploma of Teaching; Bachelor of Education; Diploma of Education? Other?

3. Have you done any formal training in Special Education? In Gifted Education?

4. Have you attended any training courses for Gifted Education? Own school In-servicing? Other schools' In-service course? Conferences?

5. Do you feel that there is a need for Special Programs for gifted children? Within the regular classroom? Full time or Part time withdrawal classes / lessons?

6. Would you be willing to attend a training course in gifted education... in school hours? Out of school hours?

7. Is there anything in particular that you would like support / assistance / guidance to improve / develop?

Appendix 8

Staff Development Package

1. Developing a Whole School Policy

The main references which have been recommended for use are:

1. *NSW Government Strategy for the Education of Gifted and Talented Students - Policy Statement*, 1991. NSW Government.

2. *Implementation Strategies for the Education of Gifted and Talented Students* , 1991. NSW Department of School Education.

3. *Teaching TAGS: Talented and Gifted Students* . 1995. Education Department of Western Australia. Copies are available from: Supply West

151 Esther Street

Belmont

Western Australia 6104

Phone: (09) 4787444

Stock Item No. 17101

4. *Gifted and Talented Modules*. South Coast Regional Task Force. Wollongong Department of School Education.

5. *Nurturing Multiple Intelligences in the Australian Classroom.* 1995. W. Vialle and J. Perry.

Throughout this research study, the term 'gifted' was chosen to represent both 'gifted' and 'talented' as found in the literature. The terms for the purpose of this research were synonymous. They did not describe different qualities or behaviours.

All suggested references are designed to be used for Staff Development. With the exception of the Policy Statement, which is available to all teachers, and Vialle and Perry's book, the other documents are in loose-leaf format and can be photocopied for Staff / Parent 'handouts' or for overheads to be used in respective courses. Only suggested

reference pages, therefore have been listed below. These references will allow schools to choose the materials that they feel best meets their own particular needs.

Some of the references and suggestions presented are specifically for schools whose populations include culturally diverse groups, and at the early childhood years of school-life. However, they could be used, and wherever necessary, supplemented or modified from other sections of the suggested texts, to be effectively used by all schools, K - 6, as well as for early secondary school years.

It is recommended that a School Committee, preferably under the guidance of one who has some training in gifted education, however, if no-one on the staff has any such training, it would be advisable that a member of the school executive assumes the role of Chairperson/Co-ordinator.

a) Establishing a School Definition

With the exception of the Vialle and Perry book, all suggested references differentiate between the terms 'gifted' and 'talented', so it is advisable that each school defines the term/s according to its own staff decision, to avoid any later misunderstandings.

i) O/H 1 - South Coast Region: Module 2 - 2.1

ii) O/H 2 - TAGS: ID 3

iii) O/H 3 - Vialle & Perry: p. 60; 164-170

b) IdentificationProcedures

i) O/H 4 - South Coast Modules: 3.1 - 3.6(b)

ii) O/H 5 - TAGS: ID 8; 10 - 20

iii) O/H 6 - Baldwin Identification Matrix

iv) O/H 7 - Frasier Identification Matrix

c) Curriculum Differentiation and Classroom Strategies

i) Principles of a Differentiated Curriculum:- O/H 8 - TAGS: PR 3 - 6.

ii) Levels of Provision:- O/H 9 - TAGS: PR 7.

iii) Acceleration:- O/H 10 - TAGS: PR 30 - 33.

iv) Developing a School -Based Program

* Overview:- O/H 11 - TAGS: PR 37 - 44.

* Teaching Models:- Renzulli's Enrichment Triad - O/H 12

TAGS: PR 46 - 49.

South Coast: Module 40.

Taylor's Multiple Talent Model - O/H 13

TAGS: PR 56 - 58.

v) Instructional Strategies

* Developing Thinking Skills:- O/H 14 - TAGS: PR 79 -83; 88 - 91; 99 - 101; 113 - 114; 117 - 119; 125 - 133.

South Coast: Module 4 (3).

* Creative Problem Solving:- O/H 15

TAGS: PR 109 - 112

South Coast: Module 4 (2).

* Bloom's Taxonomy of Cognitive Processes:- O/H 16

TAGS: PR 60 - 61.

South Coast: Module 4 (4).

* Self-Directed Learning:- O/H 17

TAGS: PR 149 - 151.

"Information Skills in the School": p. 4 - 8.

Vialle & Perry: pp. 85 - 86.

* MI in the Classroom:- O/H 18

Vialle & Perry pp. 72 - 75; 77; 82.

2.Developing a Parent Guidance / Support Policy

To develop the most effective Gifted Education Policy it is essential that the school includes parents at all levels of decision-making. Especially in schools where a large proportion of the children come from culturally diverse backgrounds, the school will need to make extra effort to ensure that these parents realise that they are an integral part part of the school's educational plan, and their opinions and support are valued. Smith strongly endorses this idea when he states:

> Parents have the potential for making significant contributions to their gifted young child's education through the interrelated arenas of home, school and community. A transactive relationship between parents and school personnel can maximise their effectiveness and provide them with both direct influence on their child's education and the professional guidance they may be seeking (Smith, 1986, p. 53).

They should be invited to attend al Staff Development sessions and 'time' should be built into the Total School Plan which allows them to visit the school, in particular the school Committee for Gifted Education, for advice / assistance whenever necessary.

Special Parent Development Sessions should also form an essential part of the whole-school policy. Recommended references for these sessions are:

a) Identification: - O/H 1 - TAGS: ID 19 - 23.

b) Ways of Assisting Your Child: - O/H 2 - TAGS: EV 9; PR 7.

Vialle & Perry, pp. 155 - 158.

Davey, p. 60.

3. Some Useful References to Enhance Classroom Instruction for Young Gifted Children

a) References for teachers that will help to enhance an 'Alternative Reading Program' and language development in early childhood:

Brown, H. & Mathie, V. (199). *Inside whole language: A classroom view.* NSW, Australia: Australian Print Group.

Brownie, M. (1990). *Starting points for writing 1 and 2.* Sydney, Australia: Horwitz Grahame Pty Ltd.

Brownie, M. (1984). *Reading between the lines.* Sydney, Australia: Martin Educational.

CD ROM *Living Books.* (Broderbund Software).

* Grandma and Me
* Little Monster at School
* The Tortoise and the Hare
* Arthur's Teacher Trouble
* Berenstain Bears get in a Fight
* Harry and the Haunted House
* The New Kid in the Block

English for Lower Primary. (1996). *Rat-a-tat-tat.* ABC Television Series. (Teachers' Guide available.

English for Lower Primary. (1996). *More than words.* ABC Television Series. (Teachers' guide available).

Gregory, J. B. (1964). *Effective Reading.* Australia: Martin Press Pty Ltd.

Hill, S. (1986). *Books alive! Using literature in the classroom.* Melbourne, Australia: Thomas Nelson Australia.

Jarred, A. & Roclofs, N. (1994). *Concept keyboard - Designer overlays.* (Available for Apple II E/GS, Apple Mac., IBM compatible). Western Australia: Fingertip Concepts Pty Ltd.

* Australiana Pack
* Junior Pack
* Kinder Pack
* Dragon Pack

Jarred, A. & Roclos, N. (1994). *Designer Overlays: User guide.* Western Australia: Fingertip Concepts Pty Lyd.

McVitty, W. (Ed.). (1985). *The PETA guide to children's literature.* NSW, Australia: Bridge Printing Pty Ltd.

Massam, J. & Kulik, A. (1987). *And what else?* New Zealand: Shortland Publications Limited.

NSW Department of Education. (1989). *Words-go-round: Books 1 - 4.* Australia: NSW Government Printing Office.

NSW Department of Education. (1994). *English K - 6: Syllabus and support documents.* Sydney, Australia: Board of Studies.

Nicolson, D. (1981). *Choose your game.* Victoria, Australia: Pitman Publishing Pty Ltd.

T.V. Ontario. (1996). *The magic library.* ABC Television series (Teachers' guide and Story Books available).

Winch, G. (1988). *Poetry for children.* Victoria, Australia: Australian Print Group.

Winebrenner, S. (1992). *Teaching gifted kids in the regular classroom.* USA: Free Spirit Publishing Inc.

b) References to assist the development of an effective Mathematics Enrichment Program in the early grades:

Baker, A., Baker, J., Clark, B. & Mulligan, J. (1988). *Young Australia maths.* Melbourne, Australia: Thomas Nelson Australia.

Brighouse, A. Godber, D. & Patilla, P. (1986). *Maths plus 1: Investigations and problem solving activities.* Melbourne, Australia: Thomas Nelson Australia.

Davidson, A. (1983). *Maths and me: Helping your child with mathematics.* Australia: Rigby Education.

Malvestuto, J. E. (Ed.). (1991). *Buffalo maths activities for infants.* reprinted by Riverina College of Advanced Education, Australia: Wagga Wagga Education Centre.

Merttens, R. (1987). *Counting to add.* London: Octopus Publishing Group.

NSW Department of Education. (1989). *Mathematics K - 6.* Sydney, Australia: NSW DSE.

Parker, A., McSeveny, A. & Johnson, E. (1993). *Signpost maths*. Sydney, Australia.: Pascal Press.

Skinner, P. (1990). *What's your problem*. Melbourne,Australia: Thomas Nelson Australia.

Sawezak, I. & Walker, T. (1991). *Maths challenges: 1 and 2*. Australia; Oxford University Press.

Tertini, J. (1986). *Mathematics for the very young*. Sydney, Australia: Horwitz Grahame Pty Ltd.

Appendix 9

IPMAI Results

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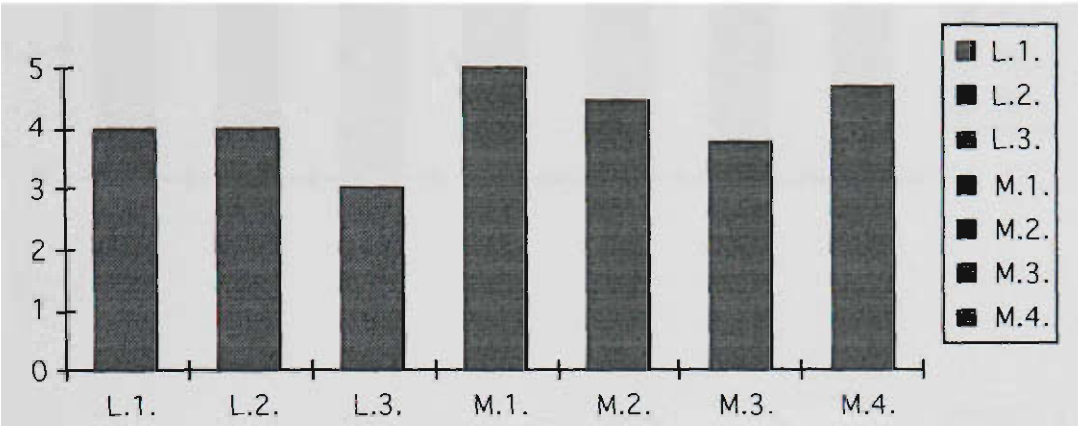

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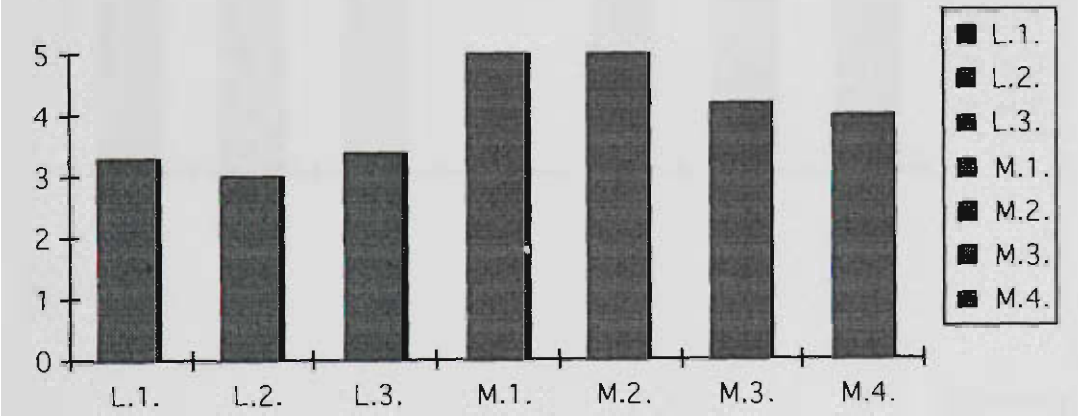

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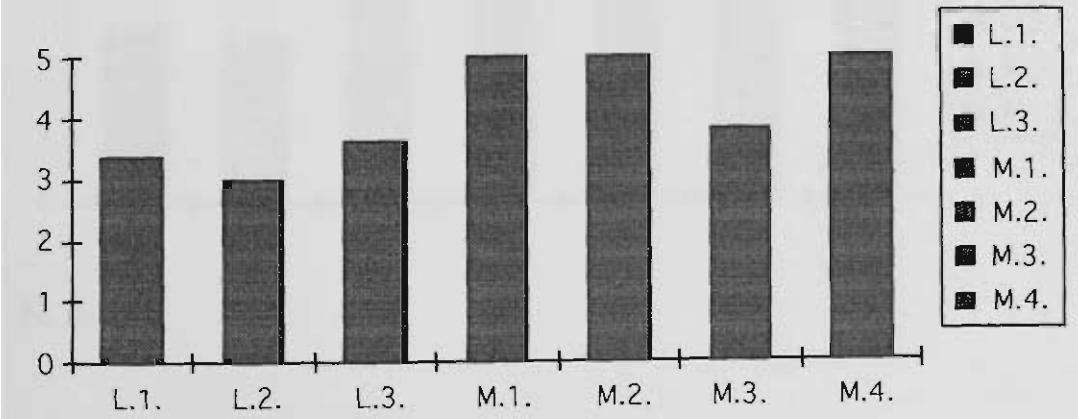

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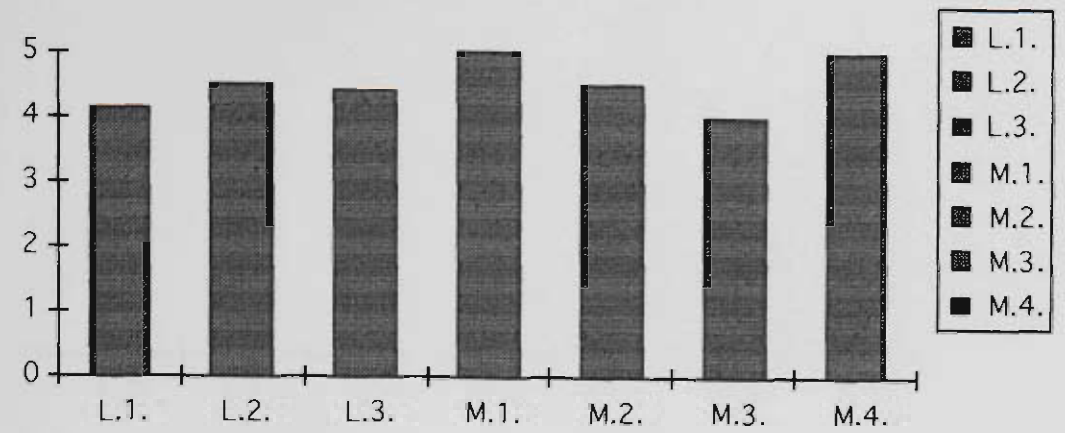
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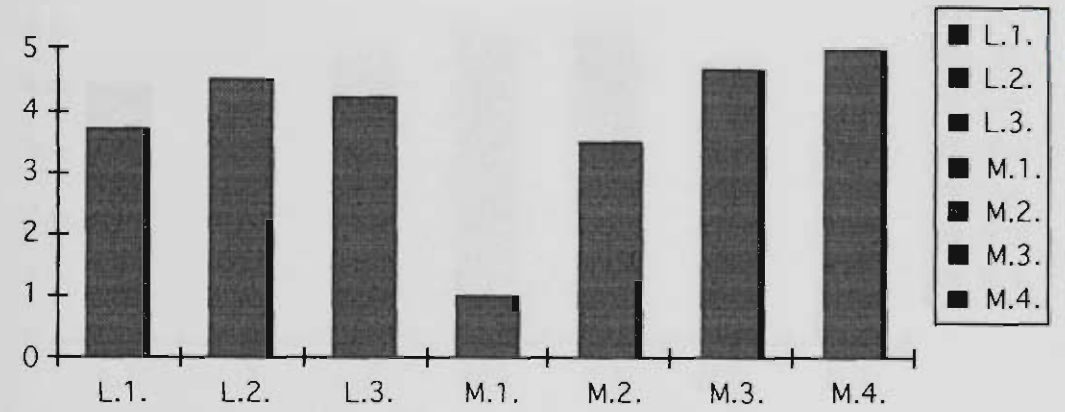
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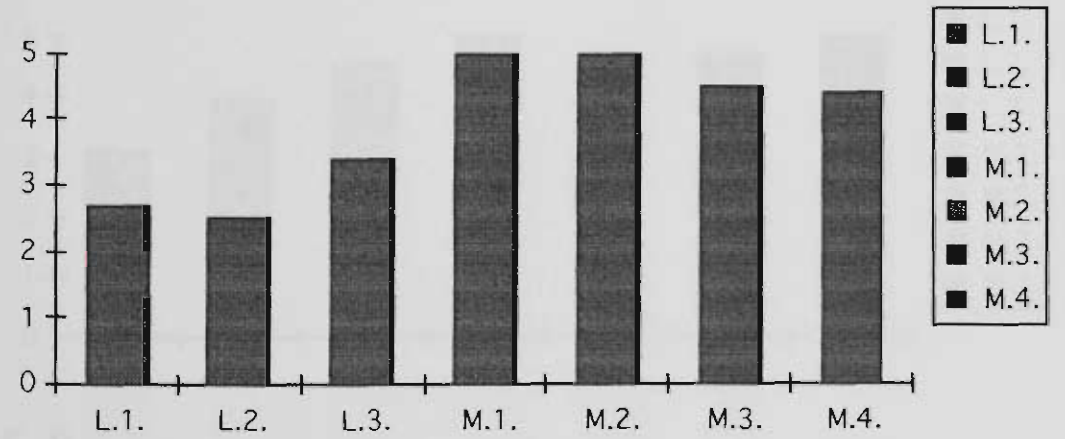
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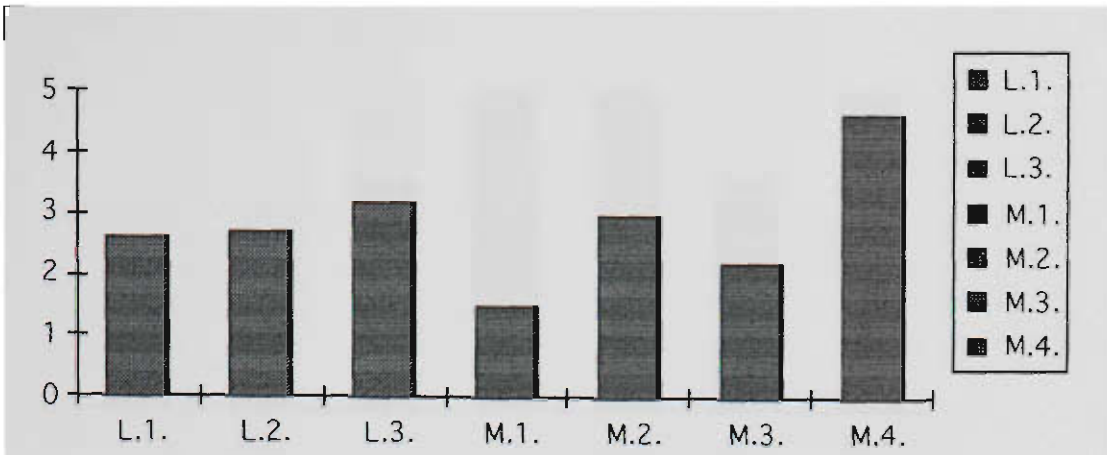
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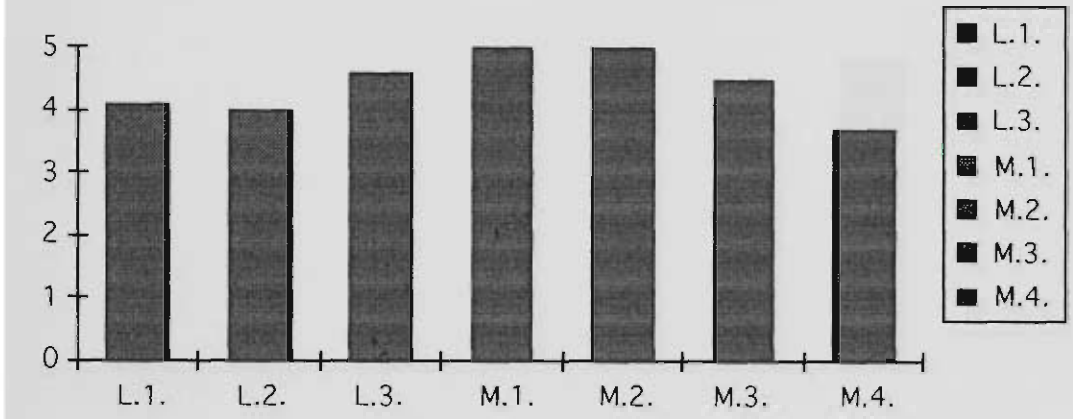
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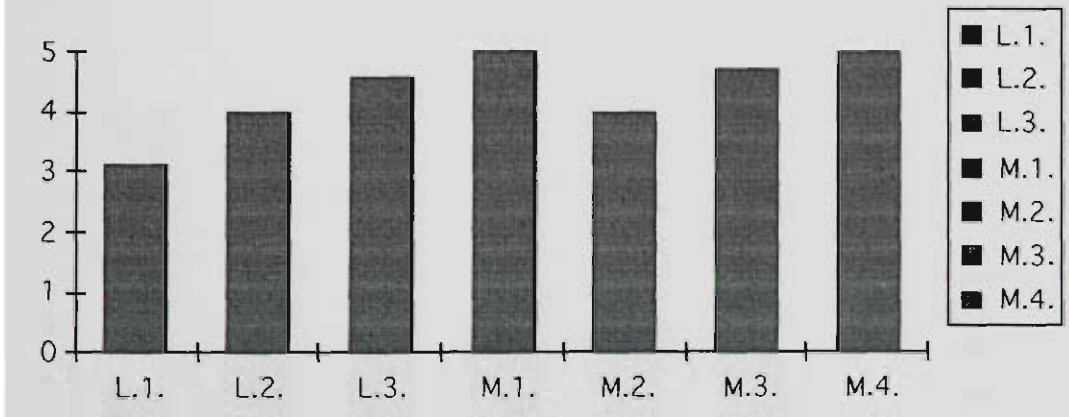
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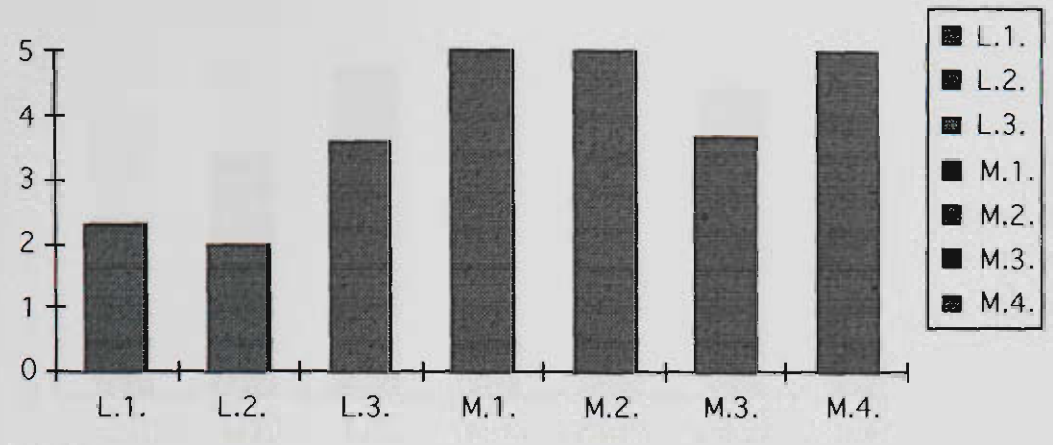
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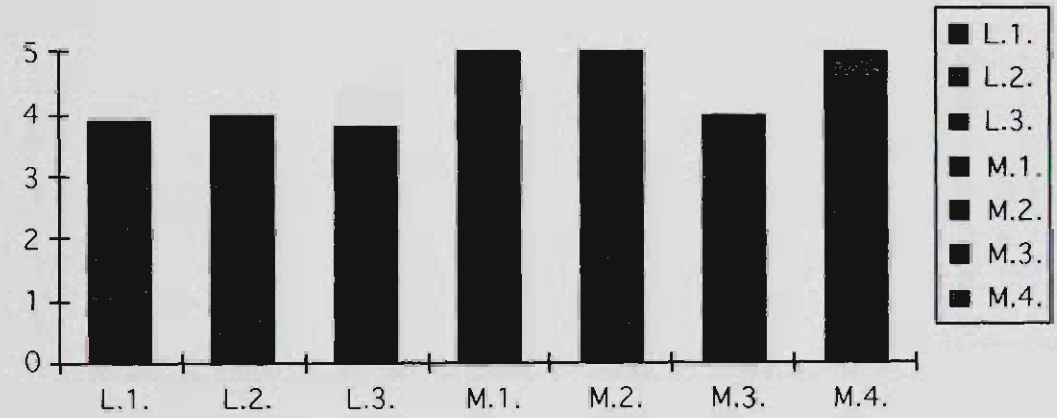
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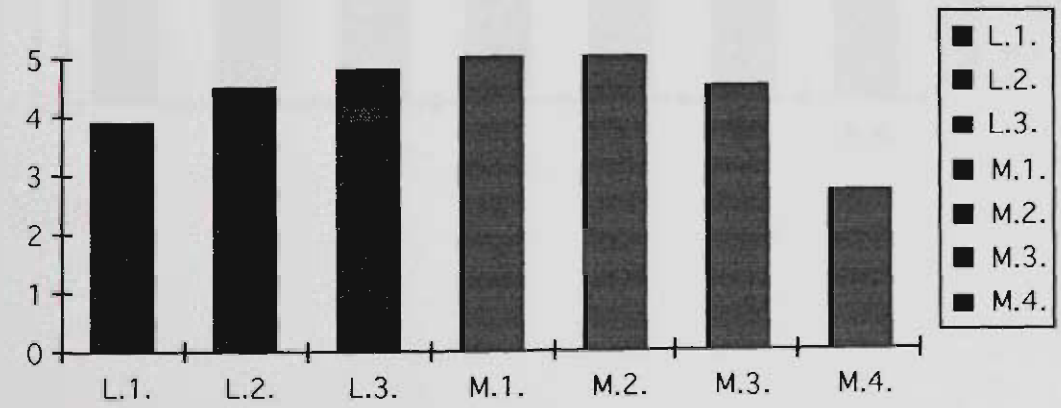
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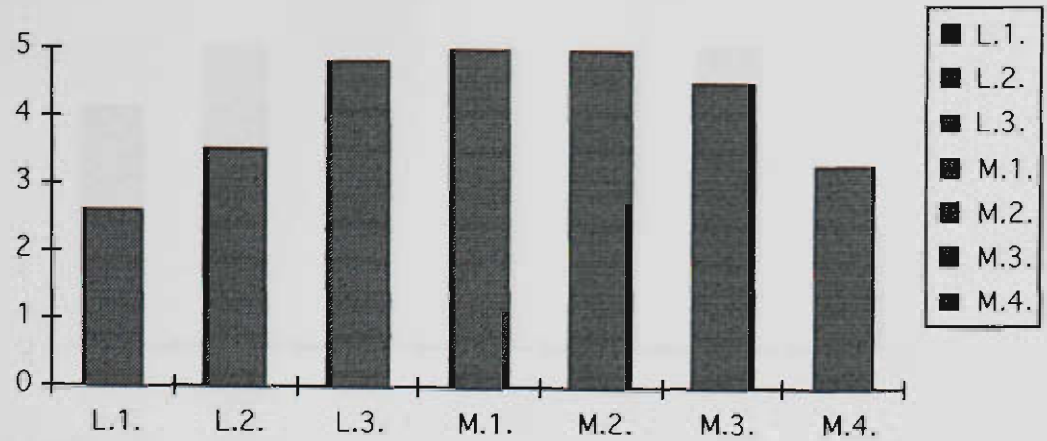
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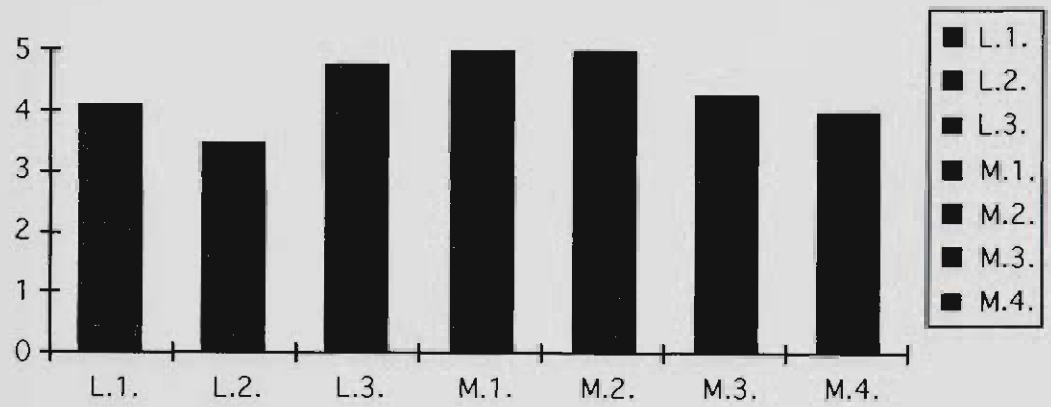
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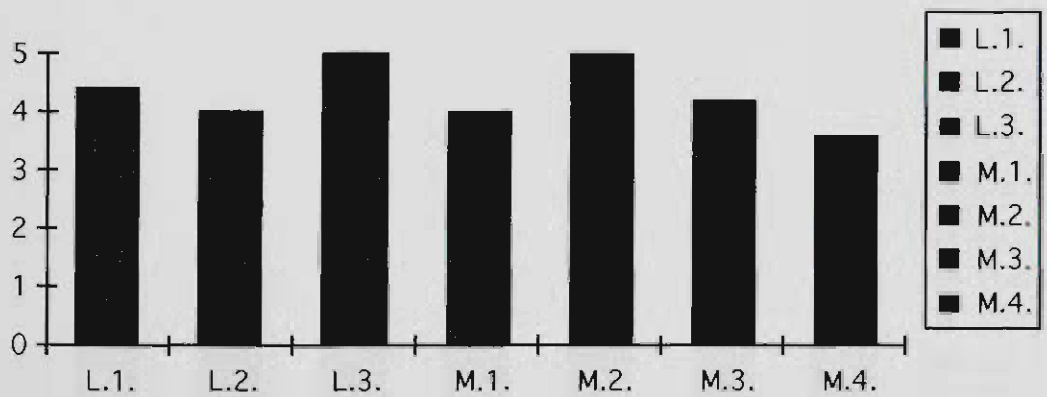
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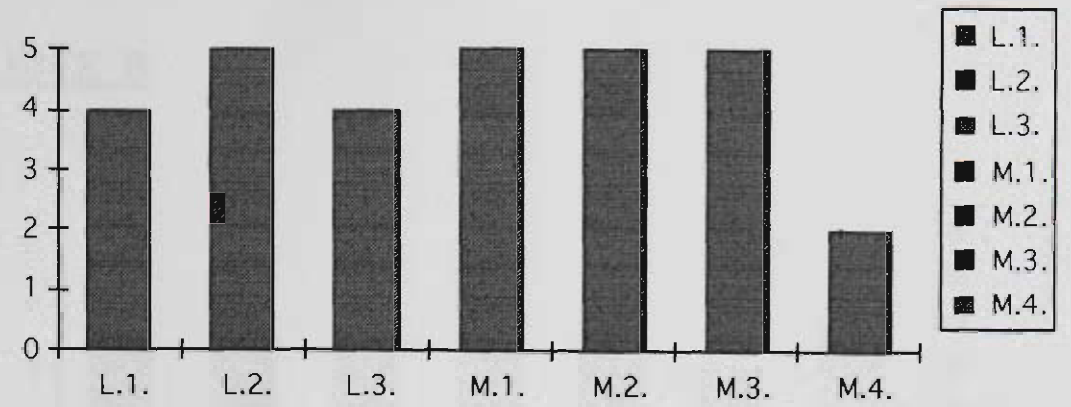
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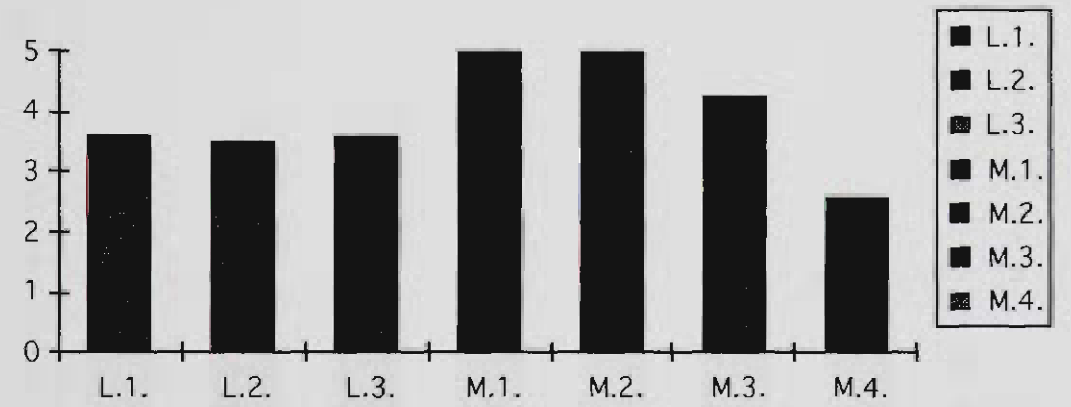
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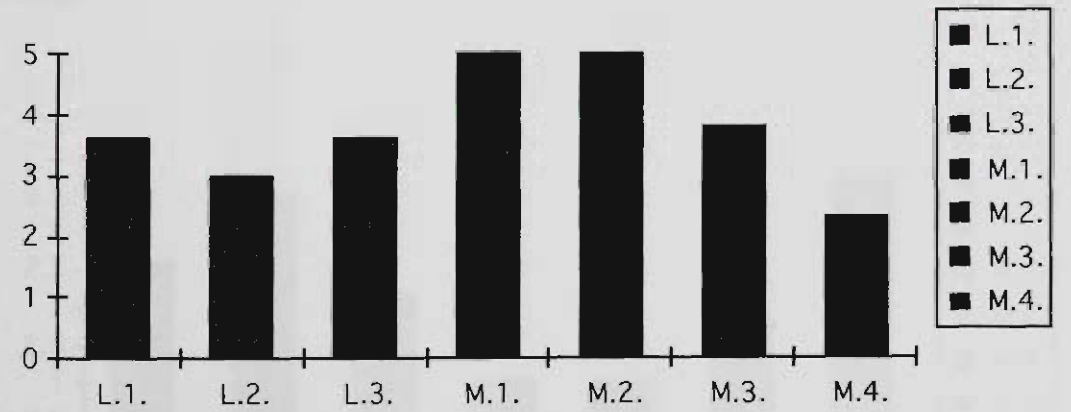
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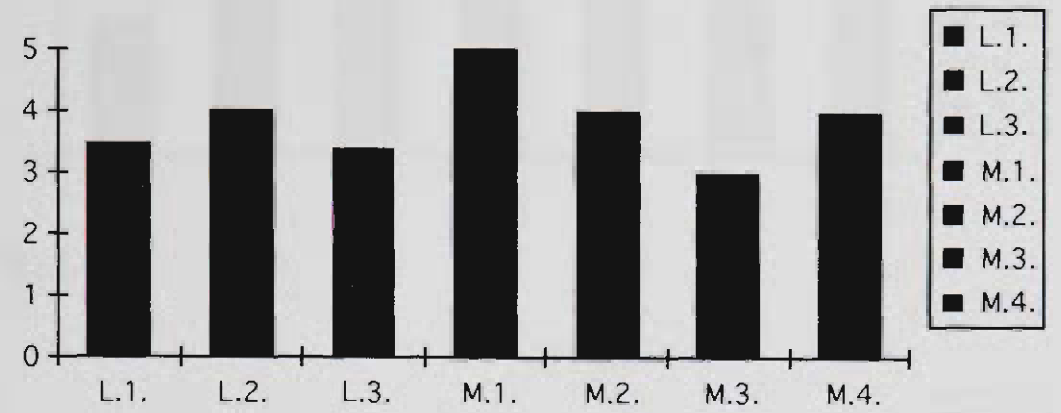

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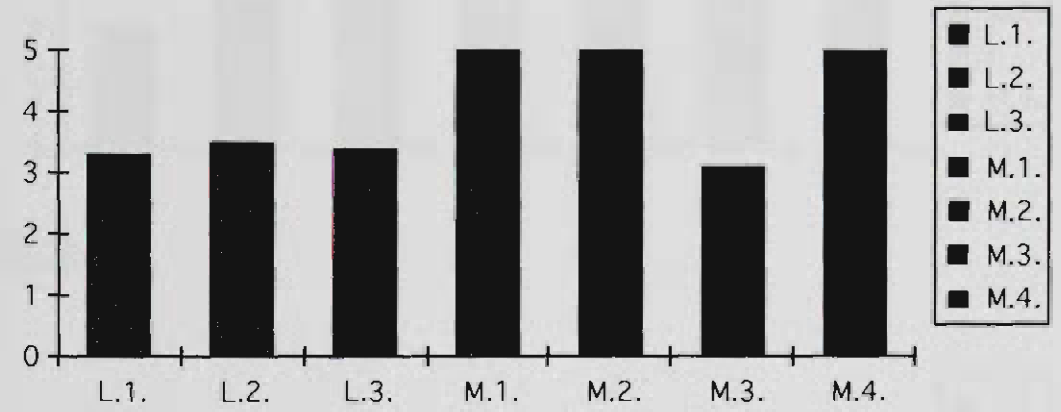

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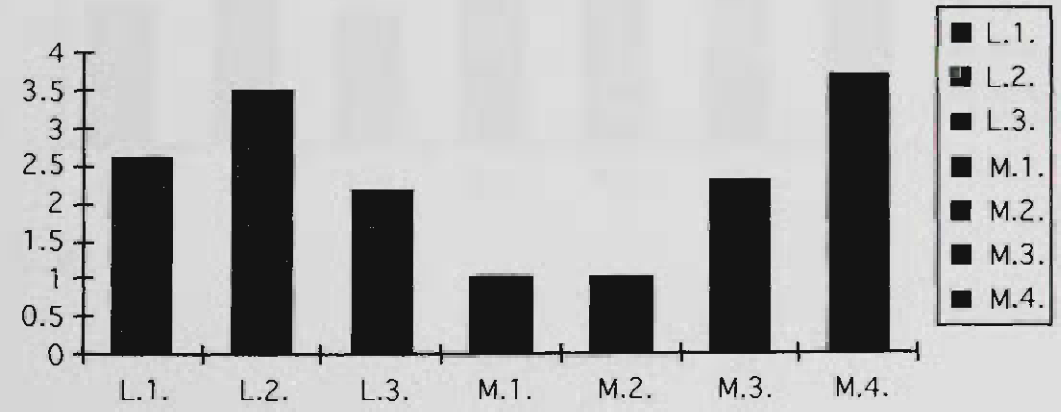

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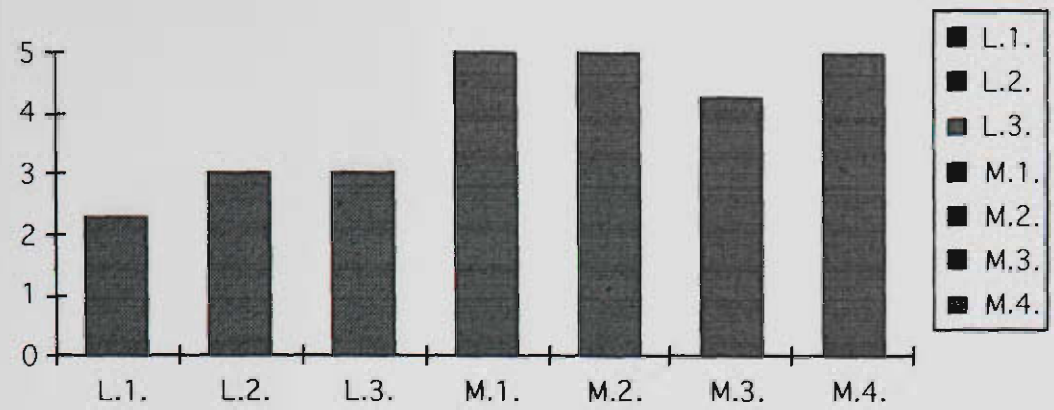
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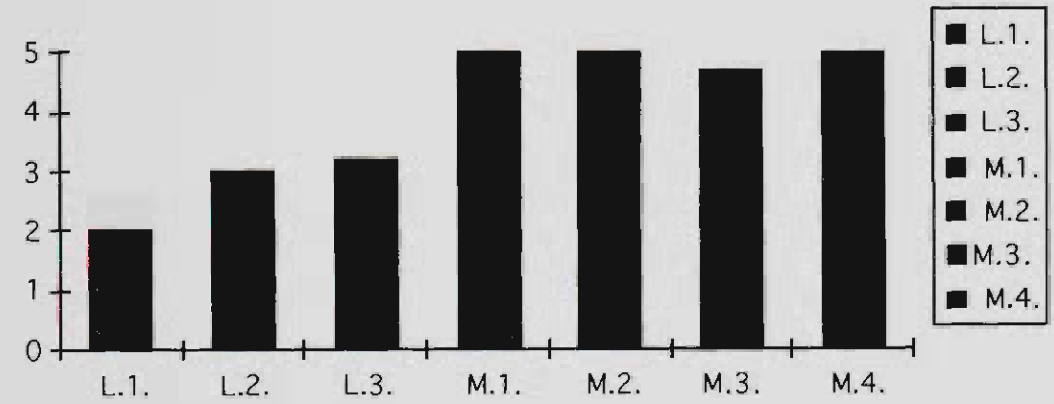
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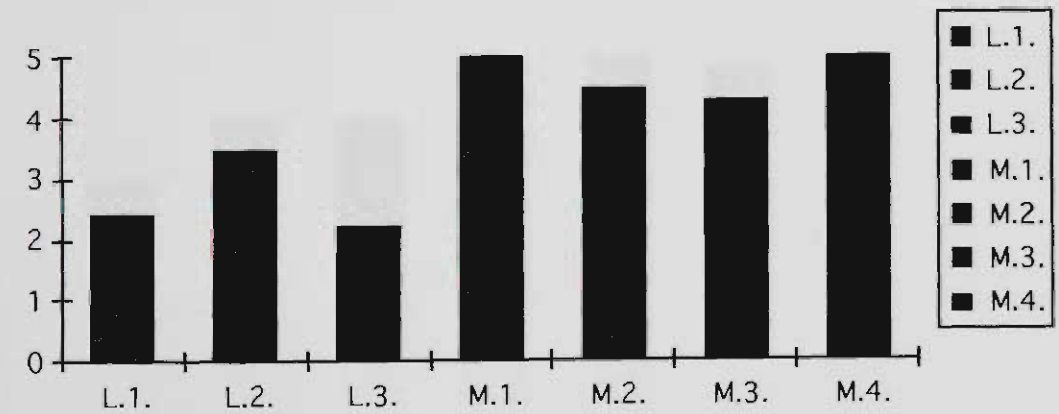
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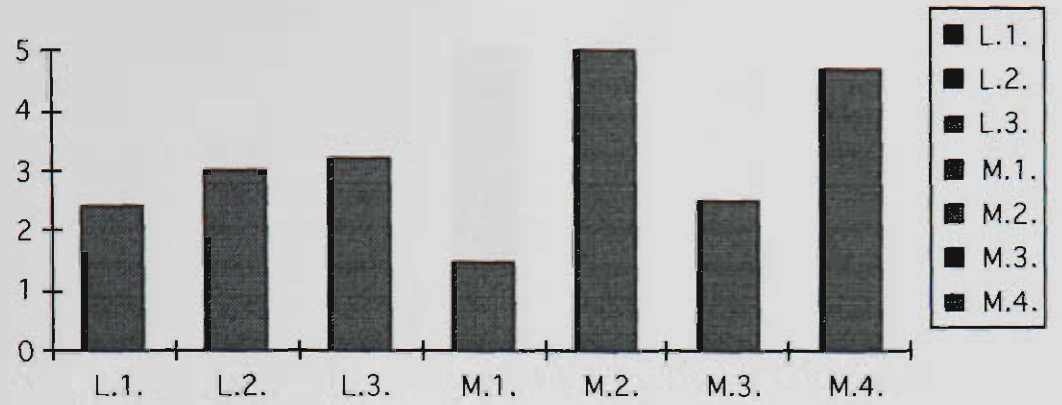
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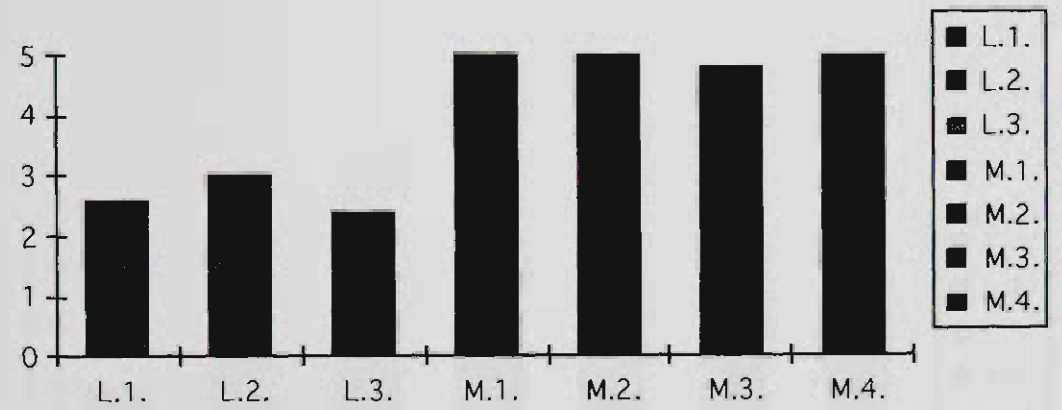
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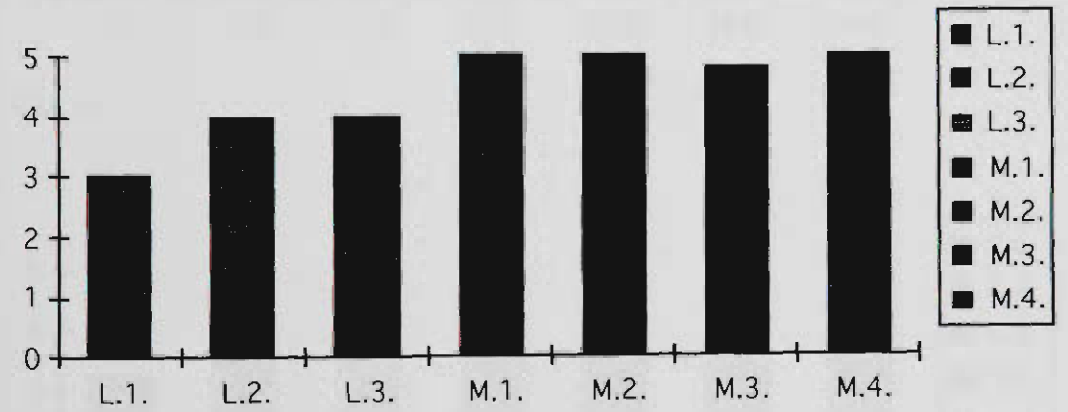
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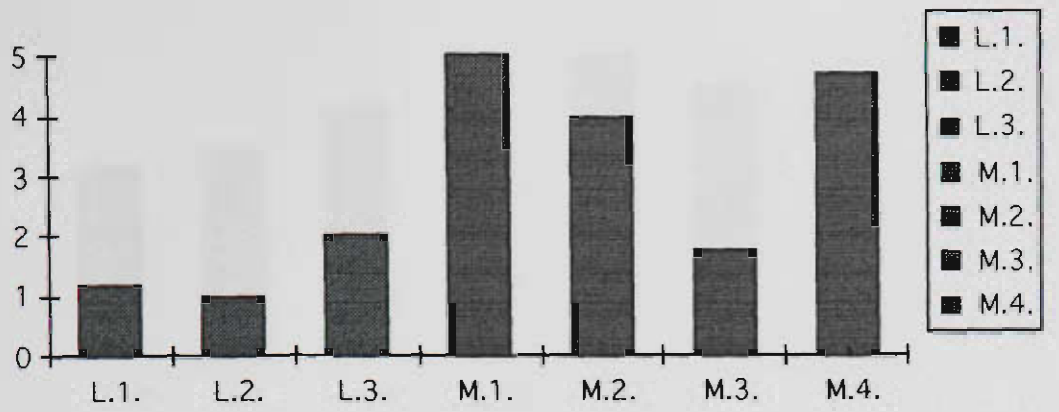
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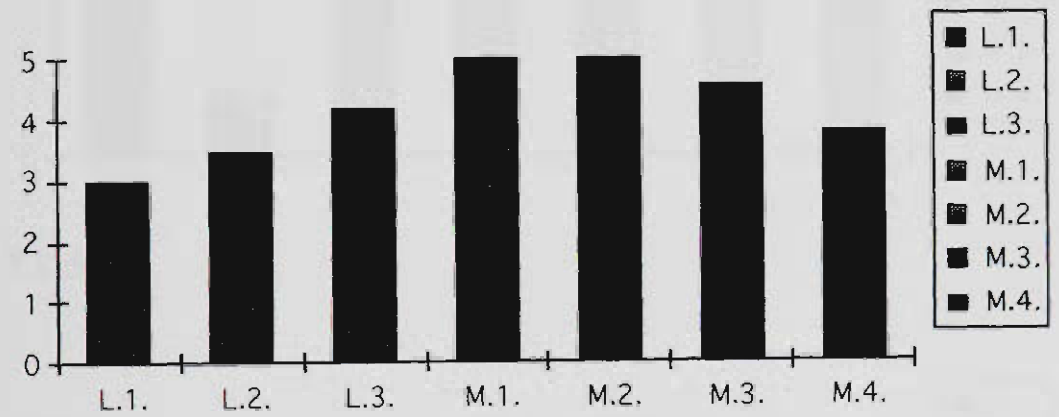
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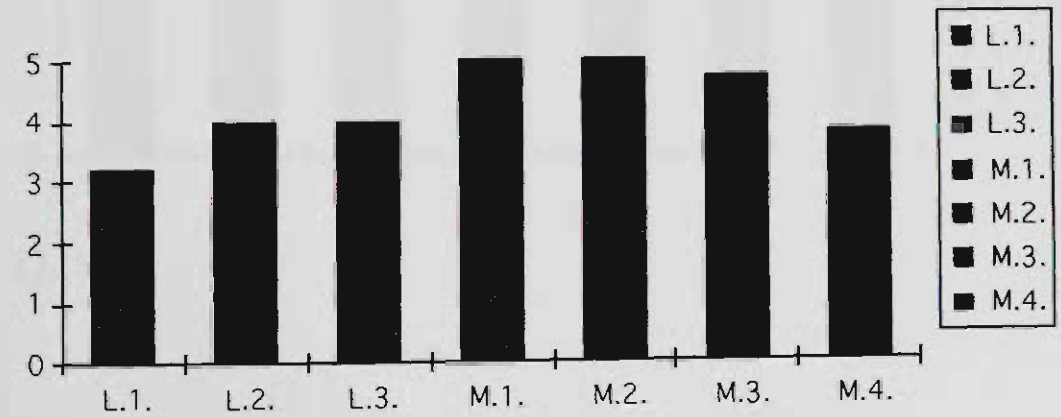
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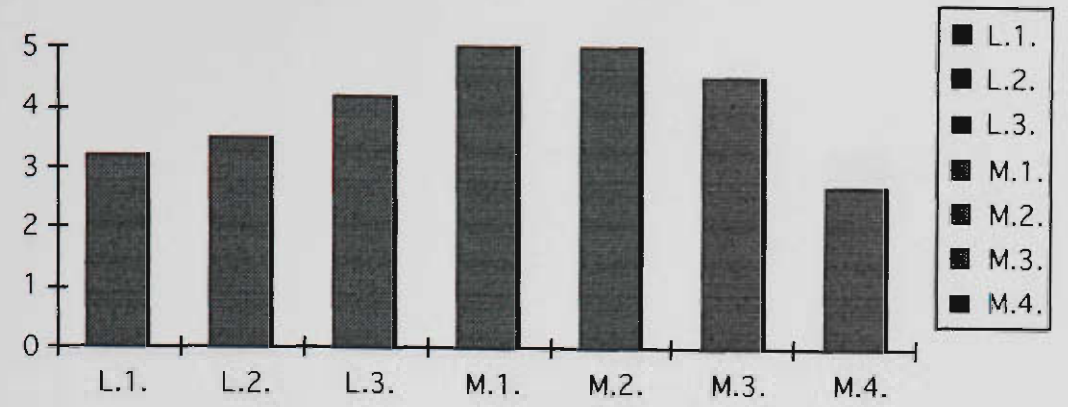
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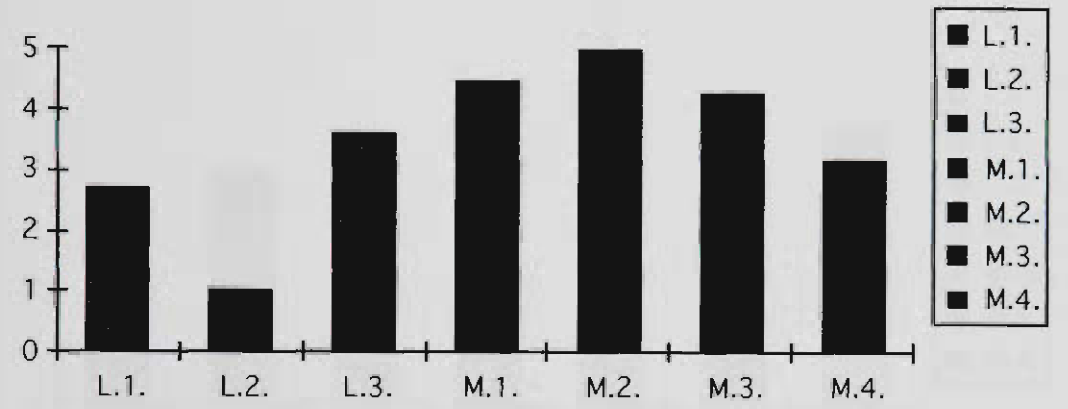
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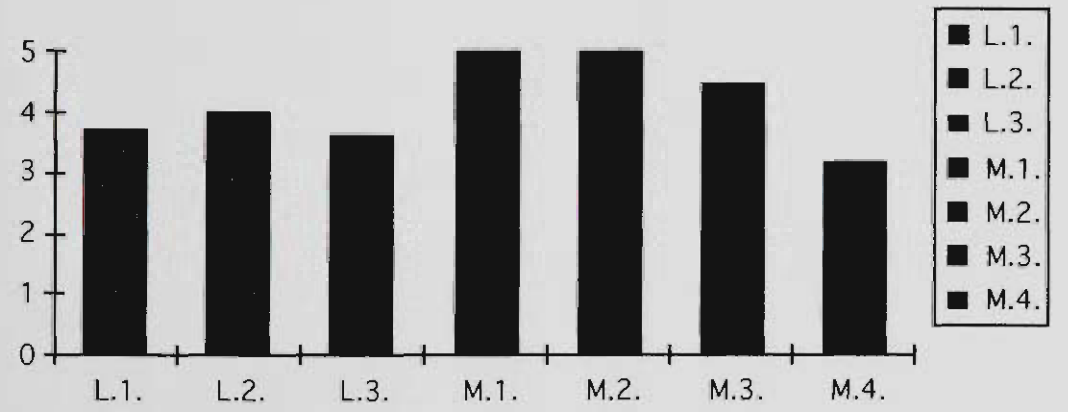
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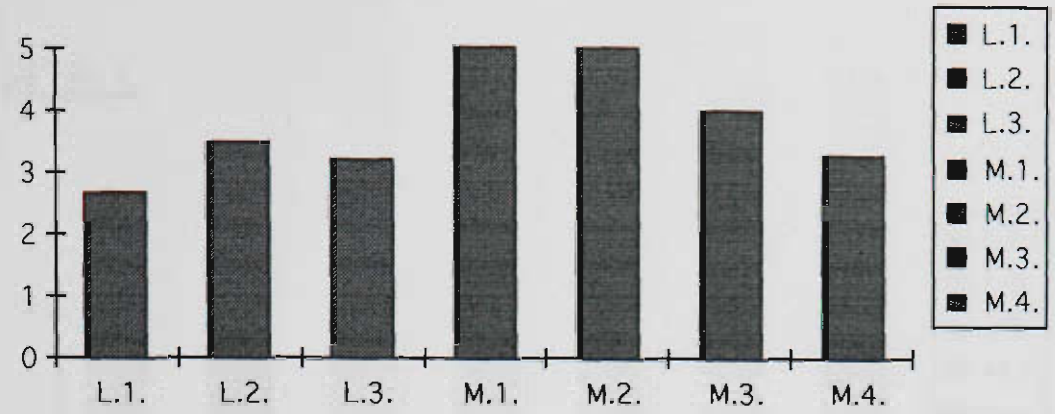
Y1. 5.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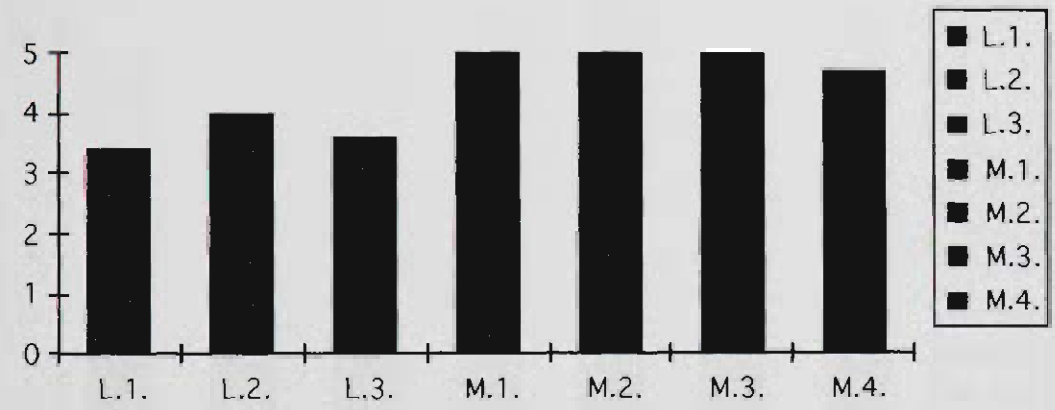
Y1. 6.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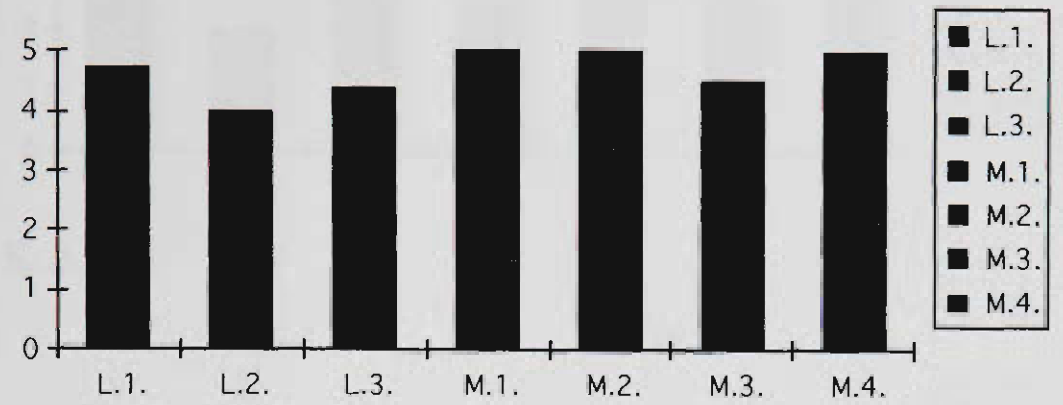
Y1. 7.

SITE C



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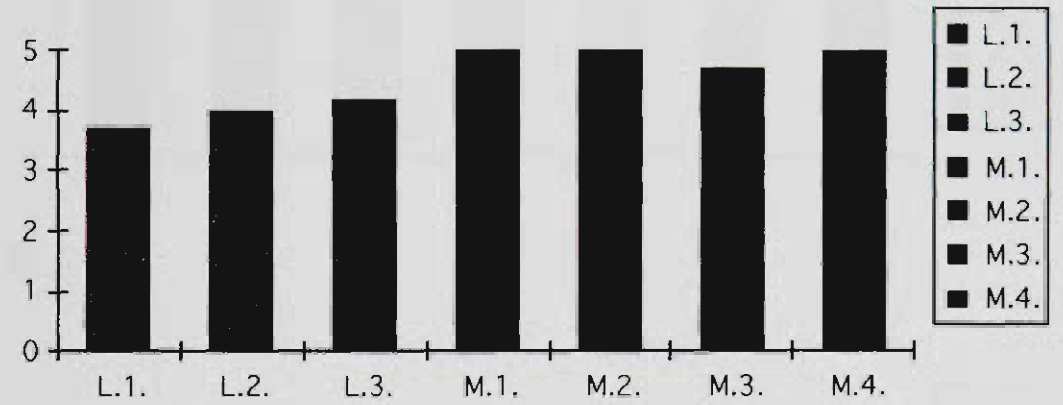

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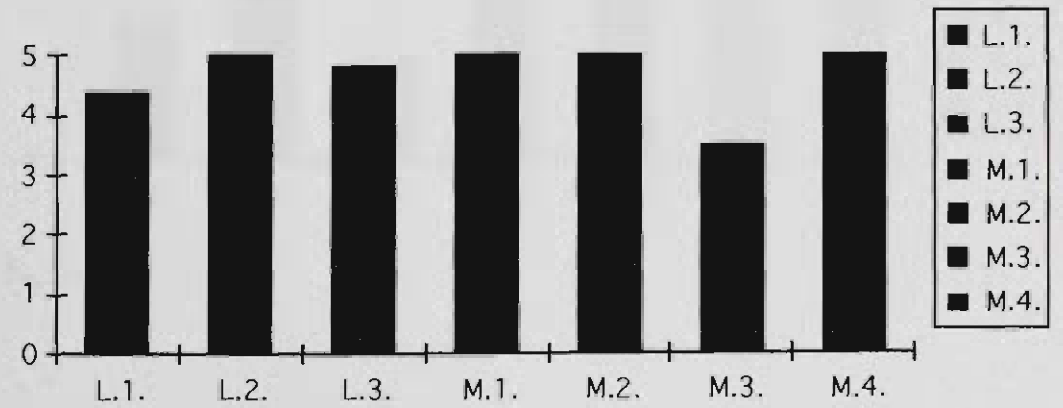

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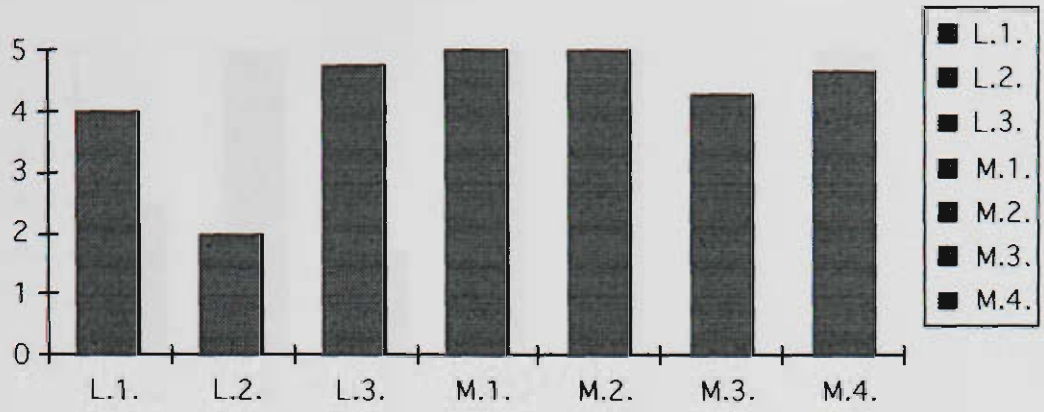
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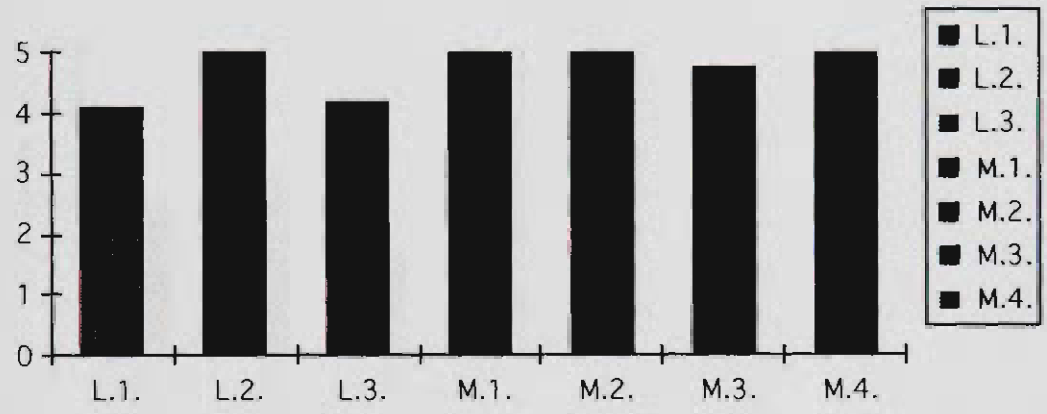
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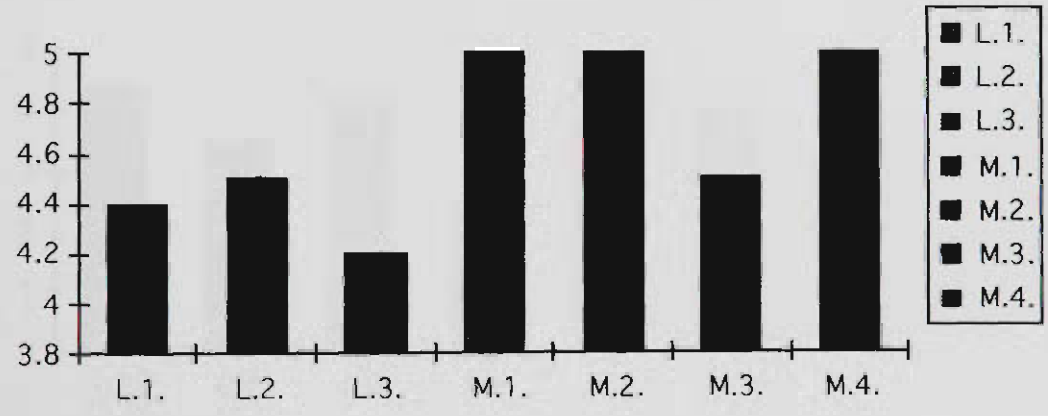
M.4.

K. 5.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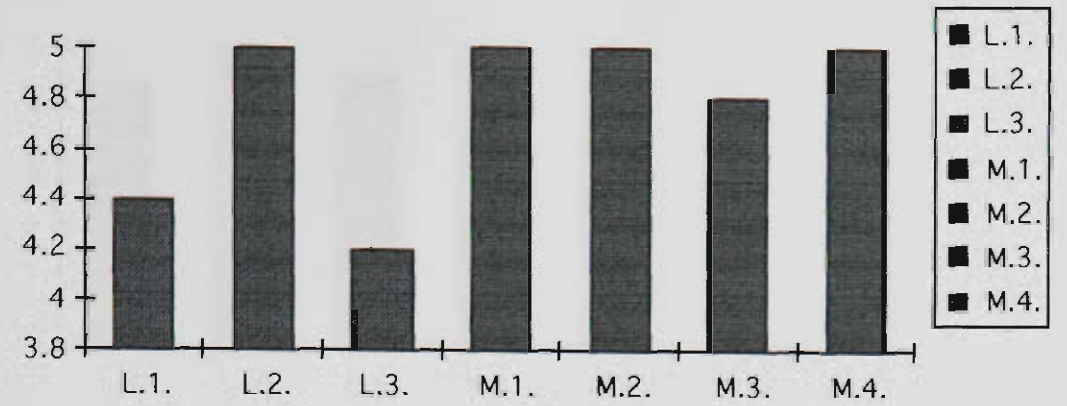
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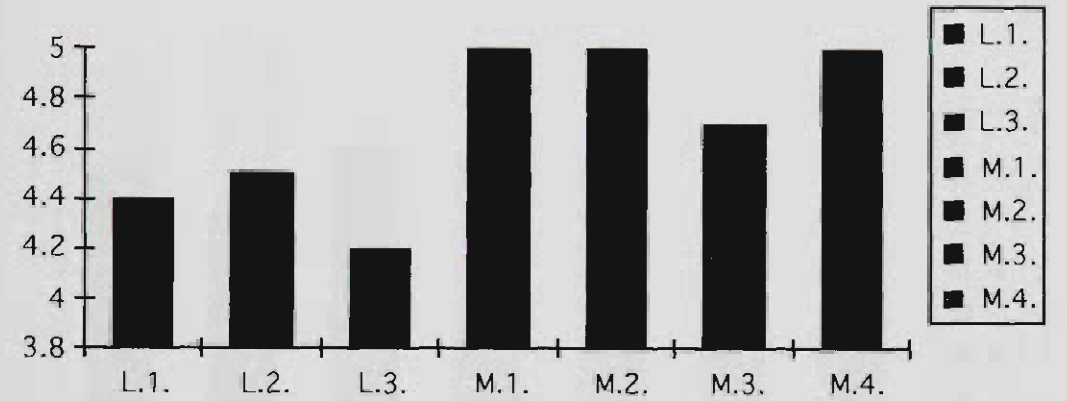
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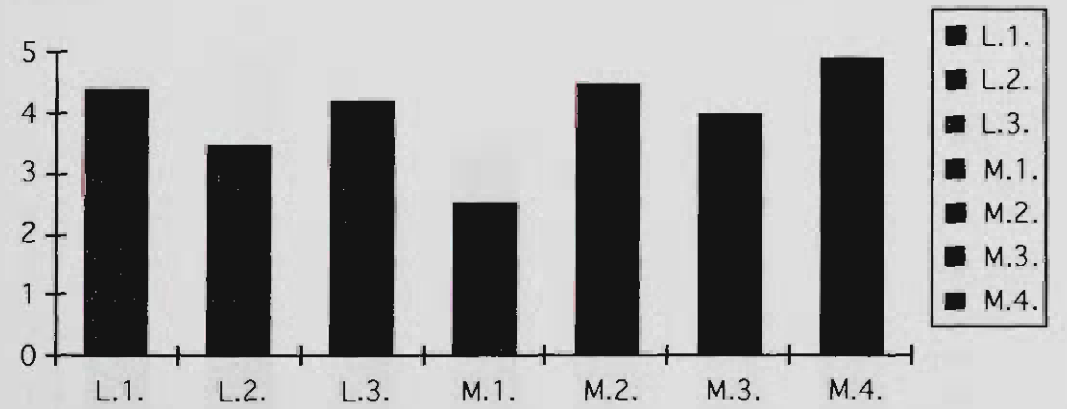
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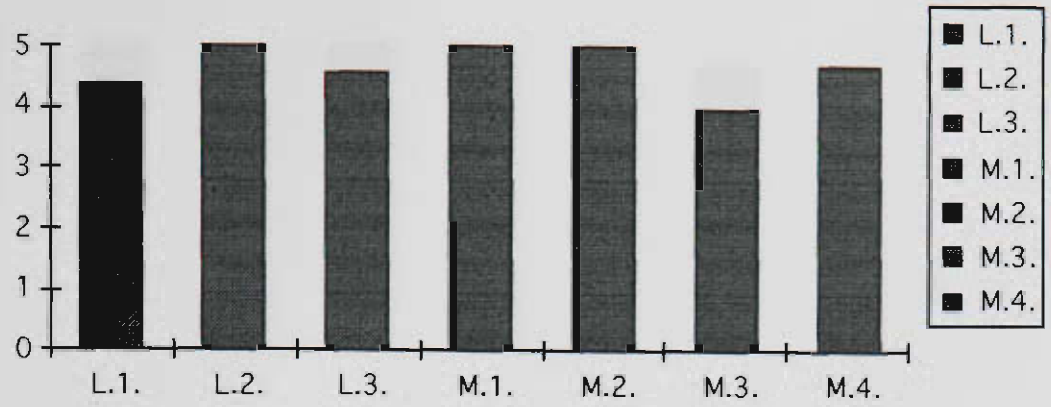
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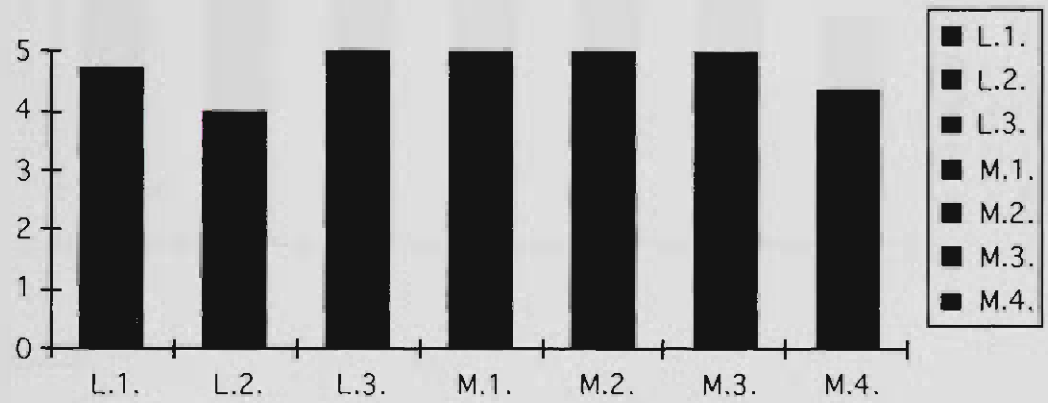
K. 10.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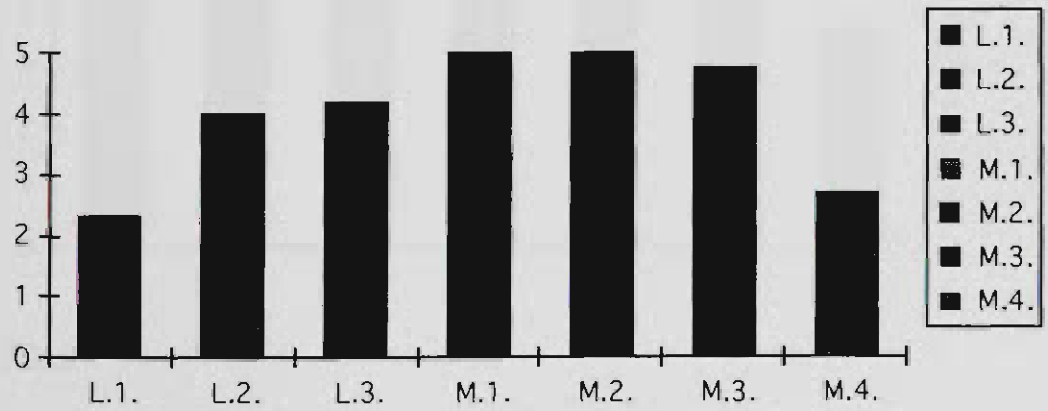
M.4.

Y1. 1.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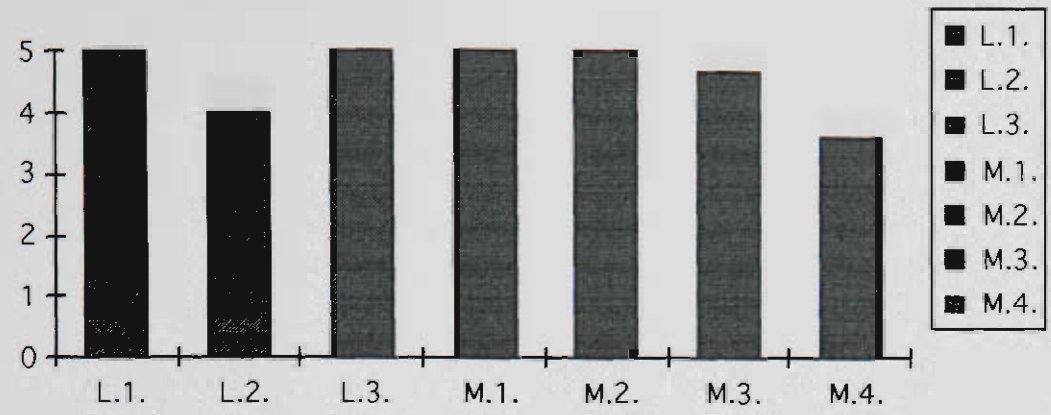
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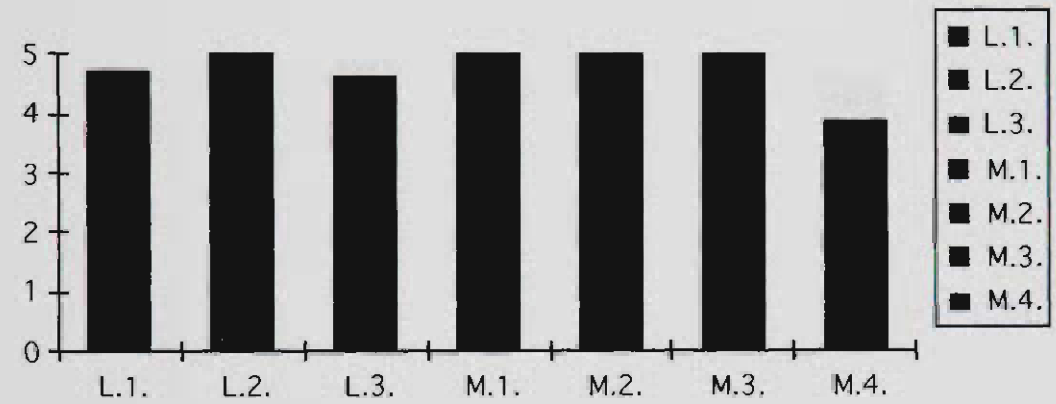
Y1. 3.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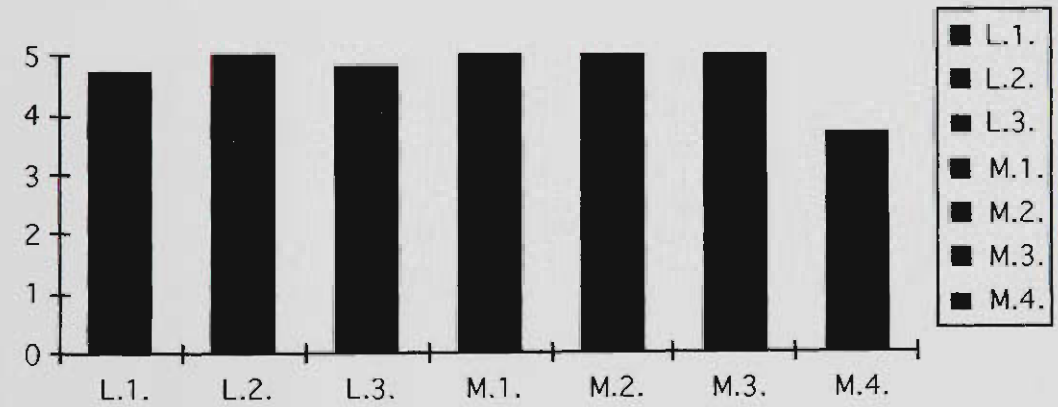
M.3.
M.4.

Y.1 4.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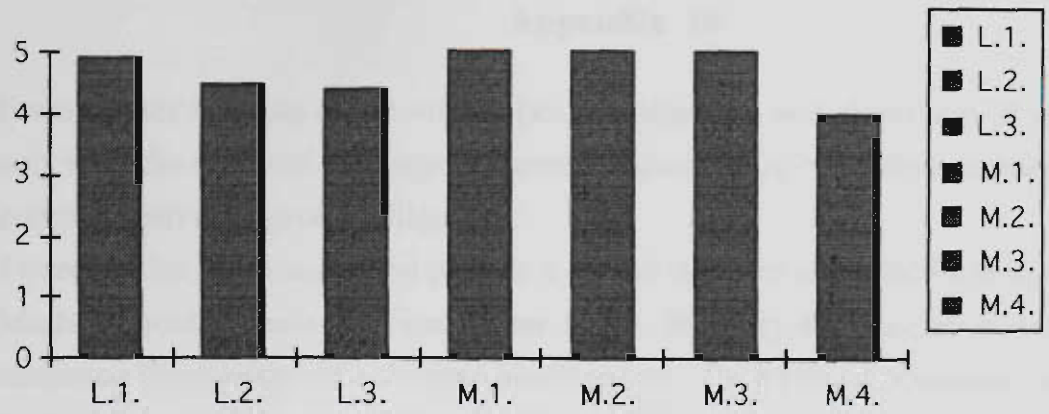
M.4.

Y1. 5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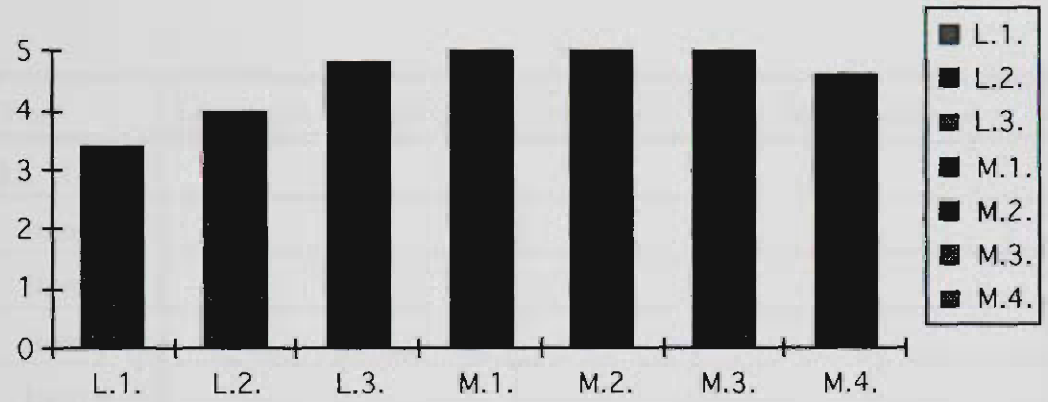
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L.2.
L.3.
M.1.
M.2.
M.3.
M.4.

Y1. 7.

Appendix 10

From further analysis of the audiotapes, photographs and classroom observations, not only were the extent of language and mathematical skills being demonstrated, but a more comprehensive range of intelligences.

To record this information and provide a greater depth to each child's profile, Linguistic, Mathematical, Creativity, Fine Motor Skills, Memory and Interpersonal Skills were chosen as the domains of exhibited intelligences. Each subtest administered was further broken down into clusters for further data analysis:

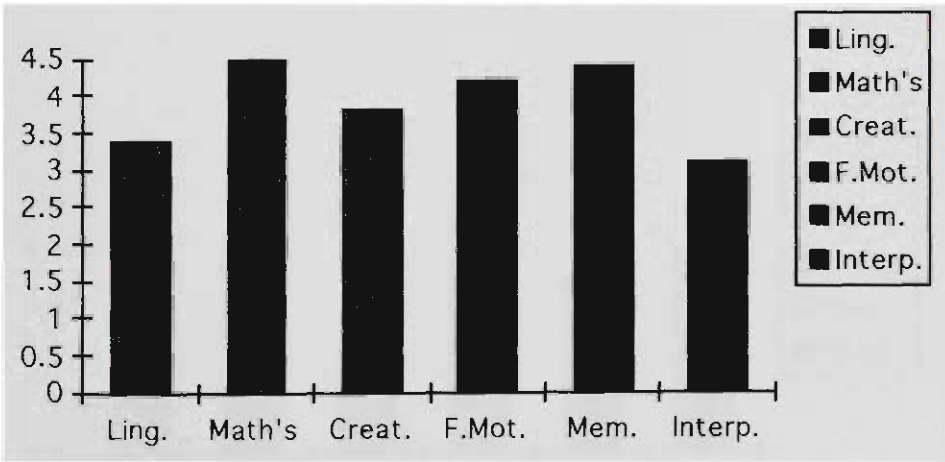
Analysis for Multifarious Intelligences:

Test	Linguistic	Math'cal	Creativity	F.M. Skills	Memory	Interperson
L. 1.						
Item 1	*					
Item 2	*	*				
Item 3	*		*			*
Item 4	*					*
Item 5	*					*
Item 6				*		
Item 7			*			*
L. 2.						
Item 1	*	*				
Item 2	*		*			*
L. 3.						
Item 1	*					*
Item 2	*	*	*			*
Item 3	*	*				
Item 4	*	*				
Item 5	*					
M. 1.						
Item 1		*		*	*	*
Item 2		*		*	*	
M. 2.						
Item 1	*	*		*	*	
Item 2	*	*		*	*	

M. 3.						
Item 1					*	
Item 2					*	
Item 3					*	
Item 4					*	
Item 5					*	
Item 6					*	
M. 4.						
Item I		*		*		
Item 2	*	*		*		
Item 3		*		*	*	
Item 4	*	*		*	*	
Item 5		*		*	*	
Item 6	*	*	*	*		
Item 7		*		*	*	

Multifarious Intelligences Results

SITE A



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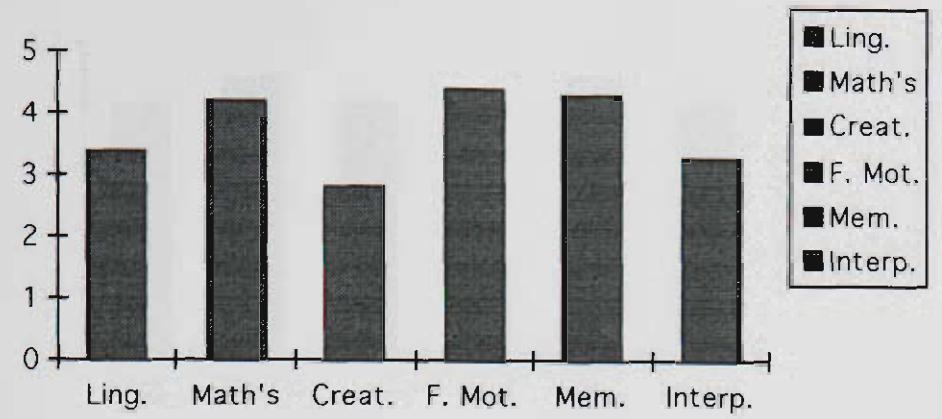
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Ling.
Math's
Creat.
F. Mot.
Mem.
Interp.

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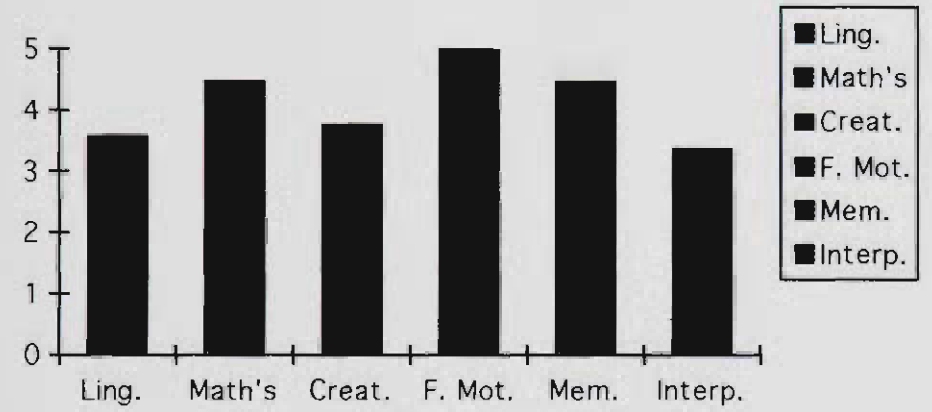
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Creat.
F. Mot.
Mem.
Interp.

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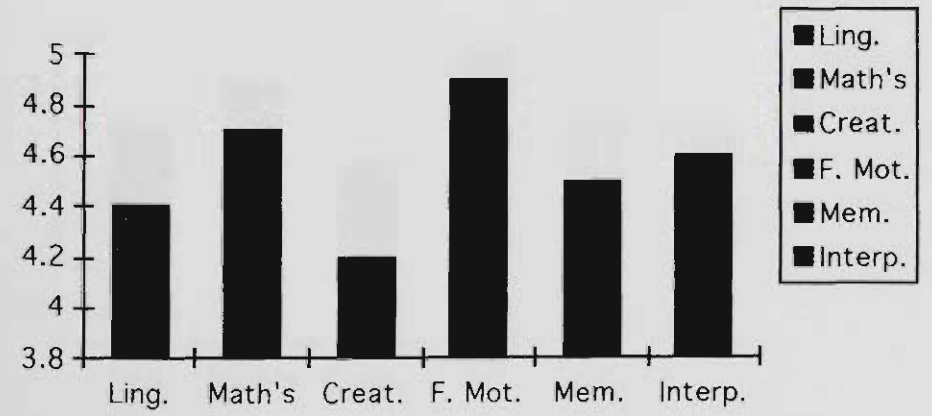
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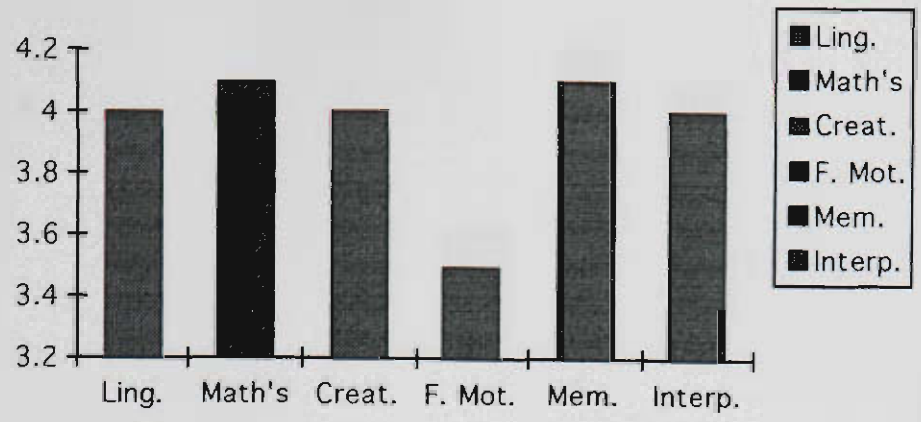
F. Mot.
Mem.
Interp.

K. 4.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Interp.

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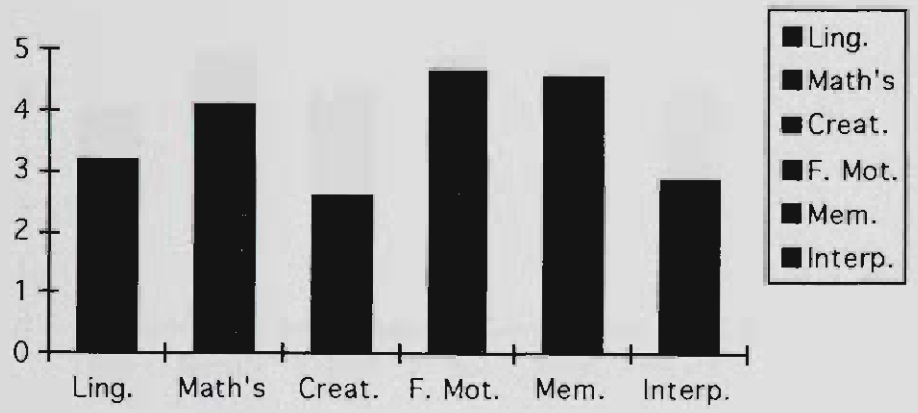
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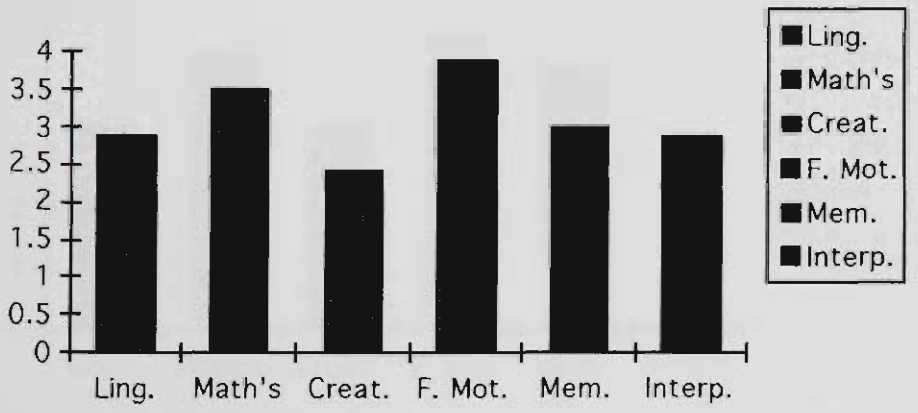
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Mem.
Interp.
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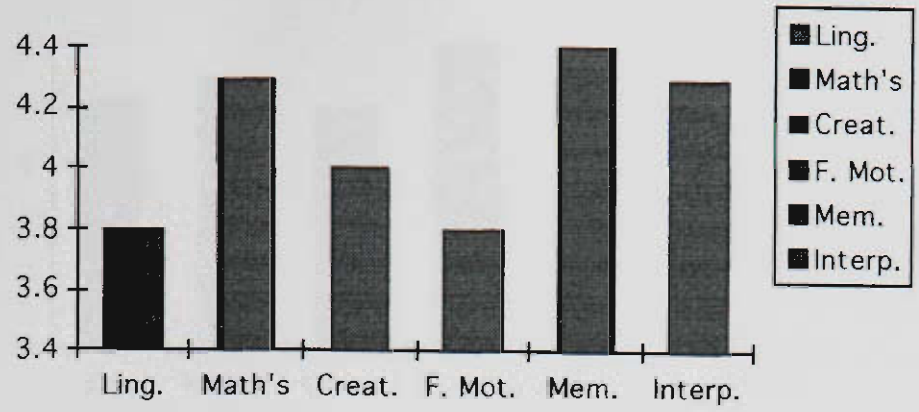
Math's
Creat.
F. Mot.
Mem.
Interp.

K. 7.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Interp.
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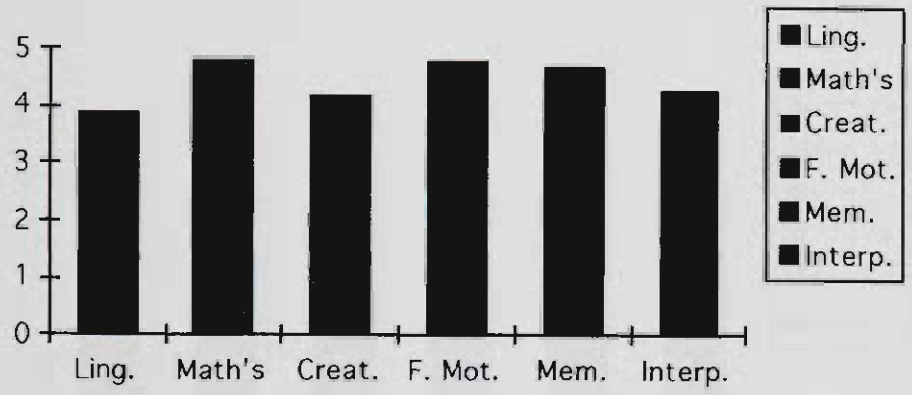
Mem.
Interp.

K. 8.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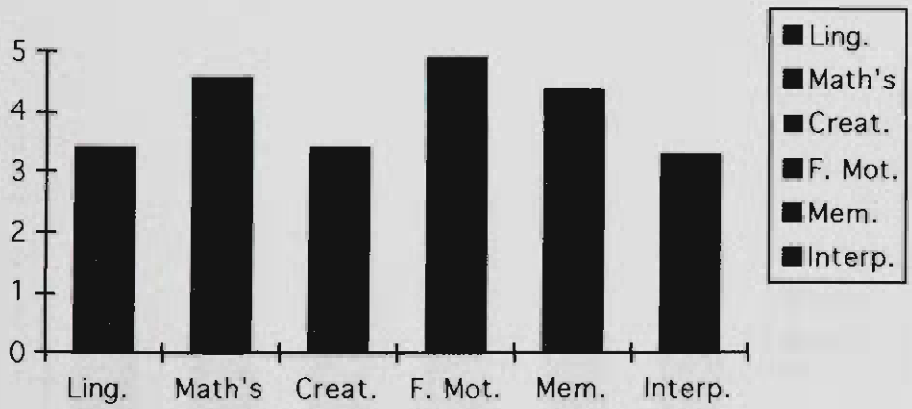
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Mem.
Interp.

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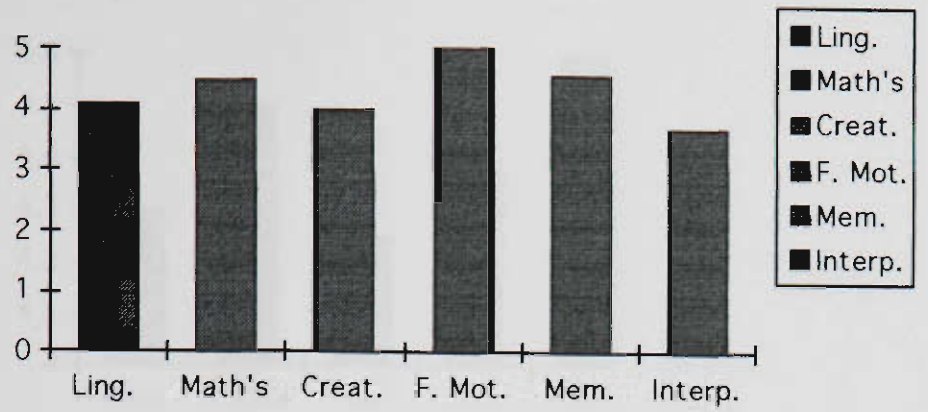
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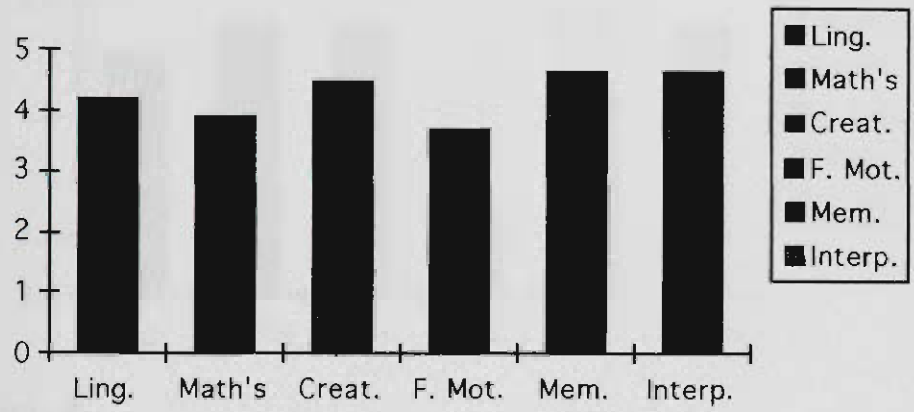
Creat.
F. Mot.
Mem.
Interp.

K. 11.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Math's
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F. Mot.
Mem.
Interp.

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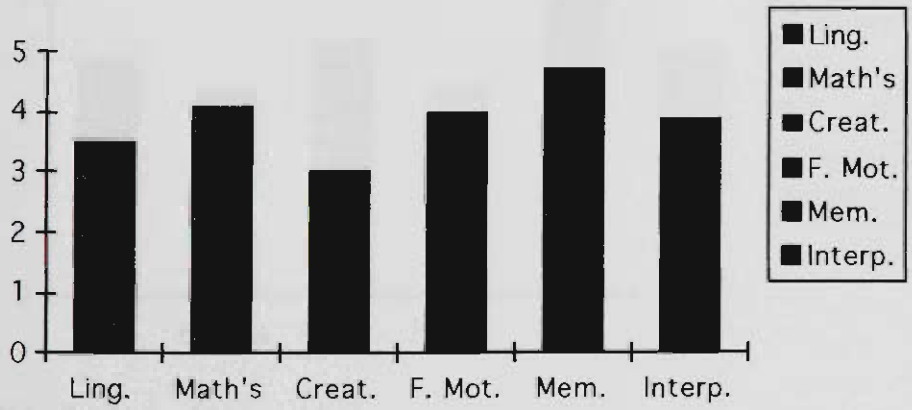
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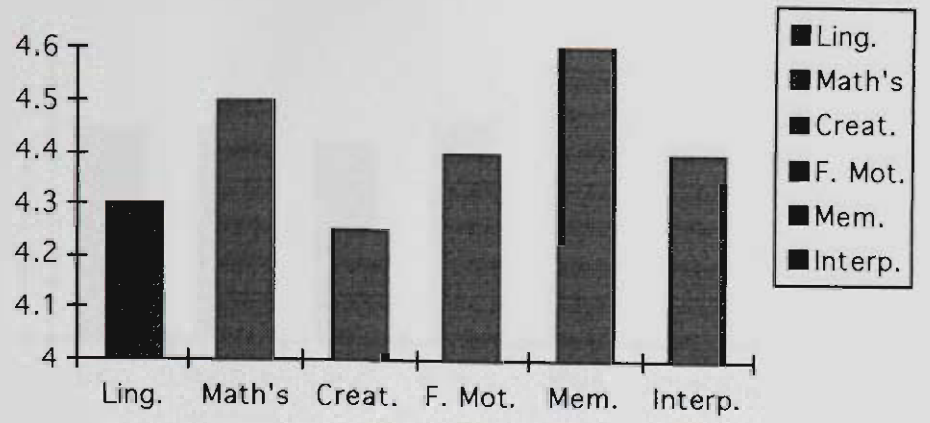
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F. Mot.
Mem.
Interp.

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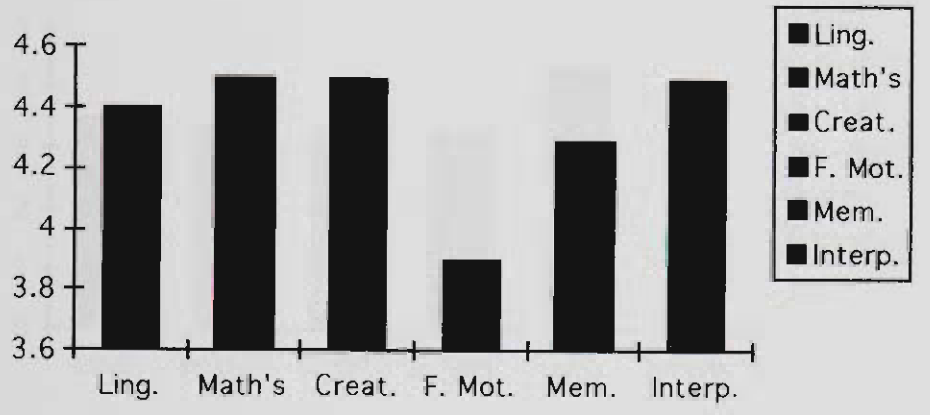
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Interp.

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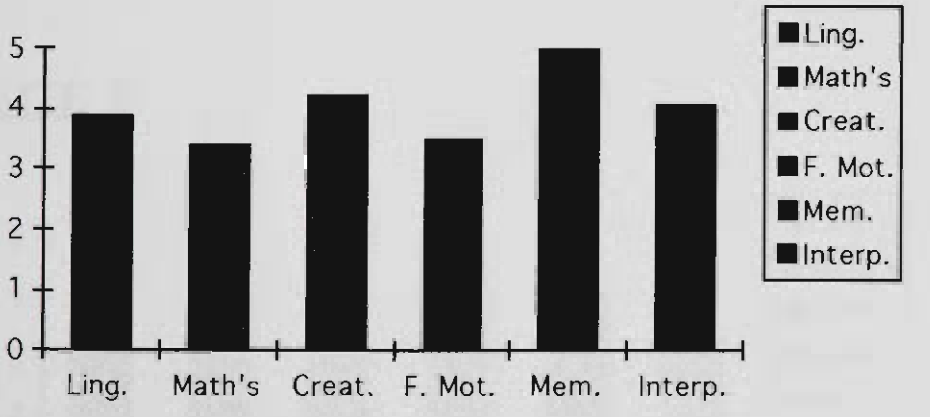
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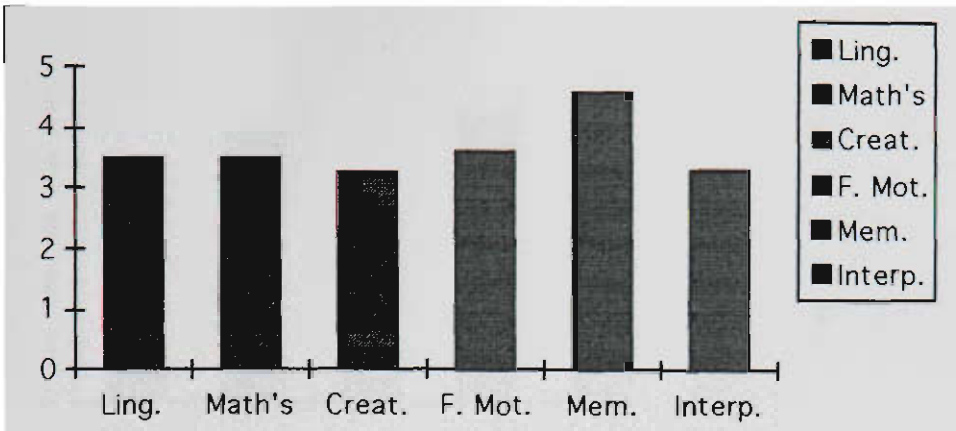

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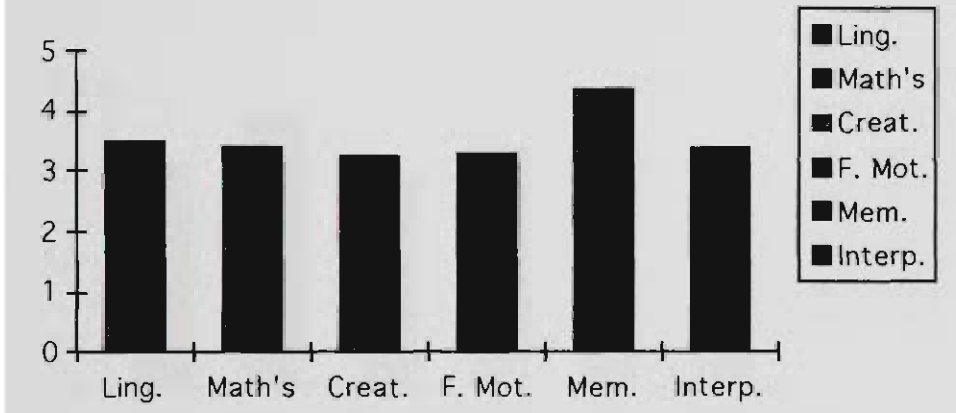

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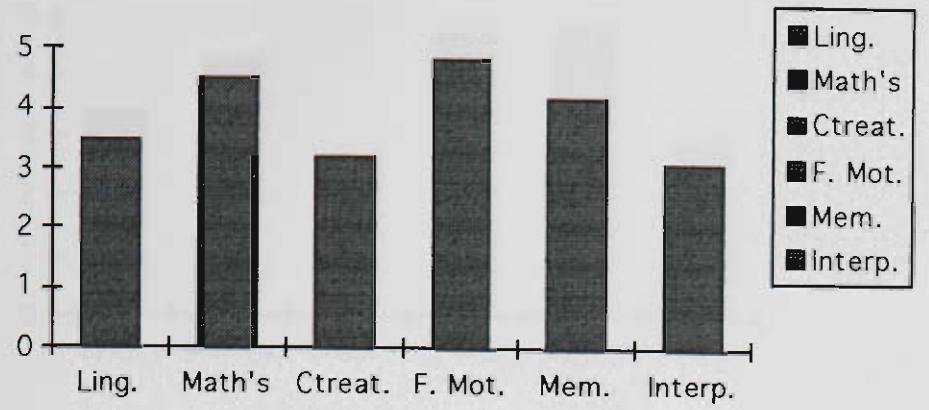
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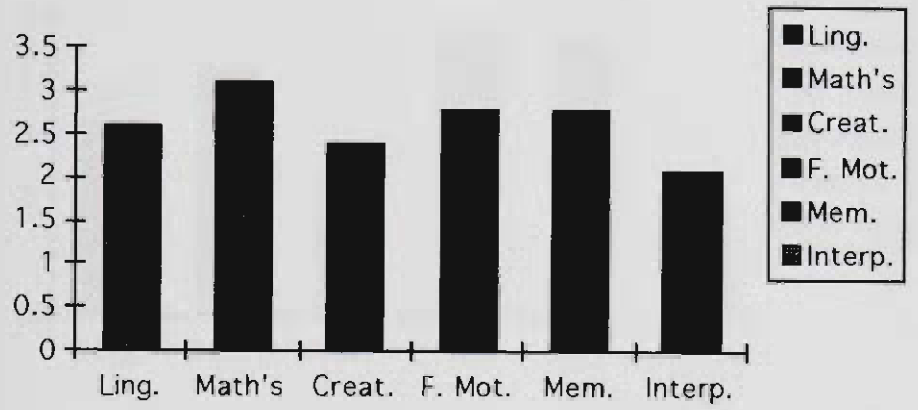
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Interp.

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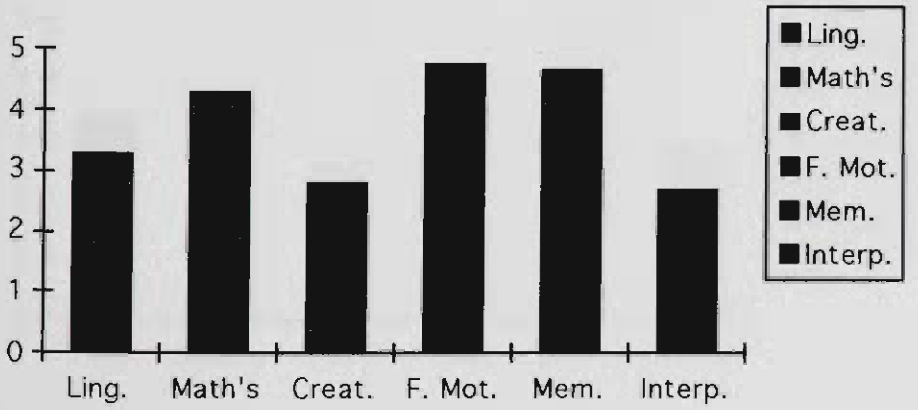
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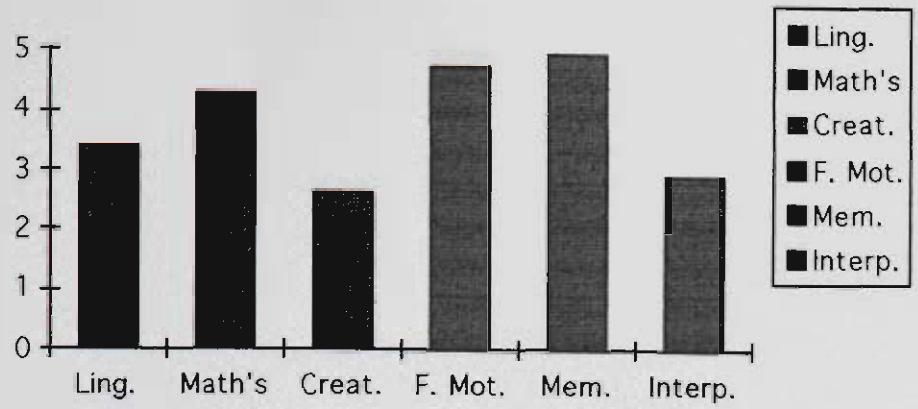
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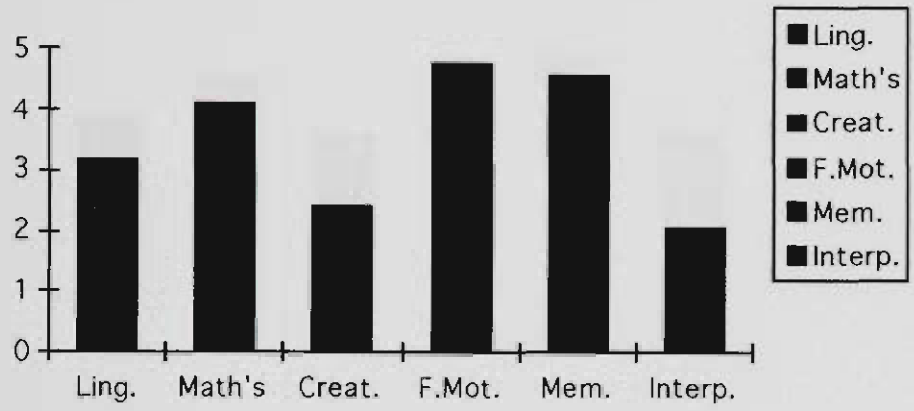
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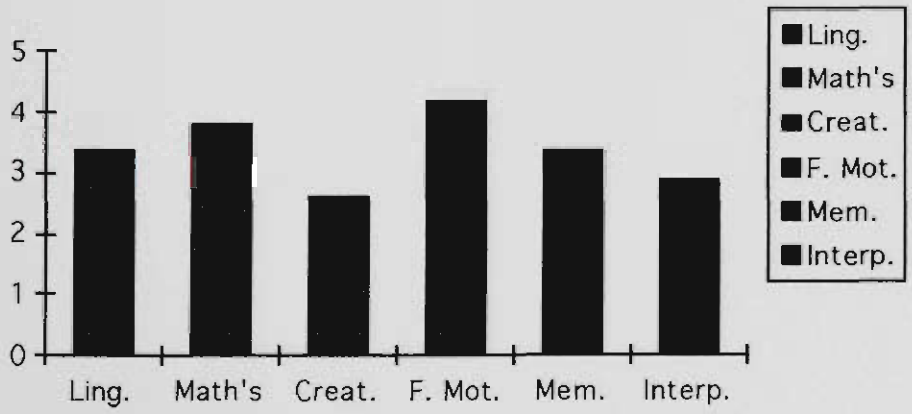
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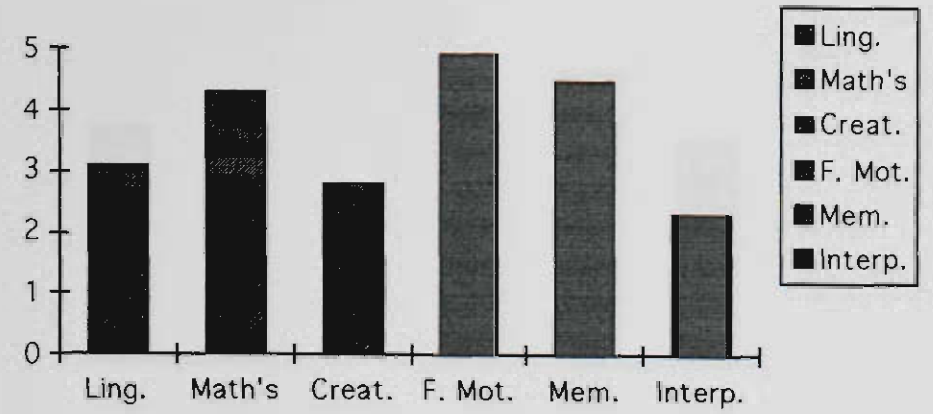
K. 7.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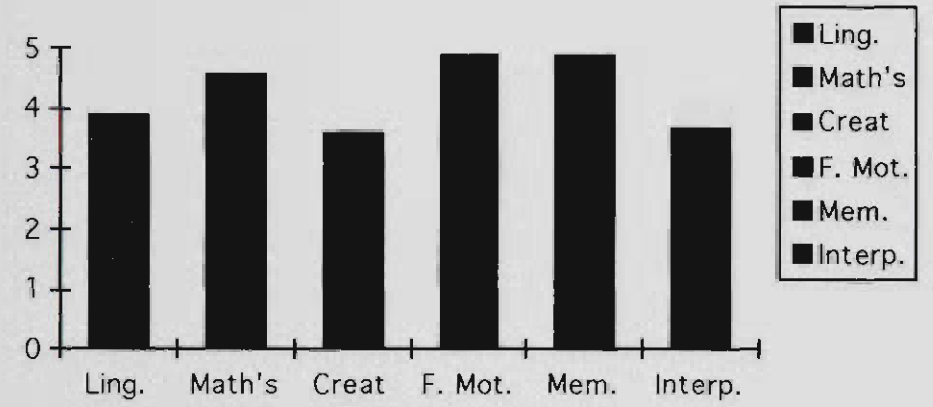
F. Mot.
Mem.
Interp.

K. 8.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Interp.

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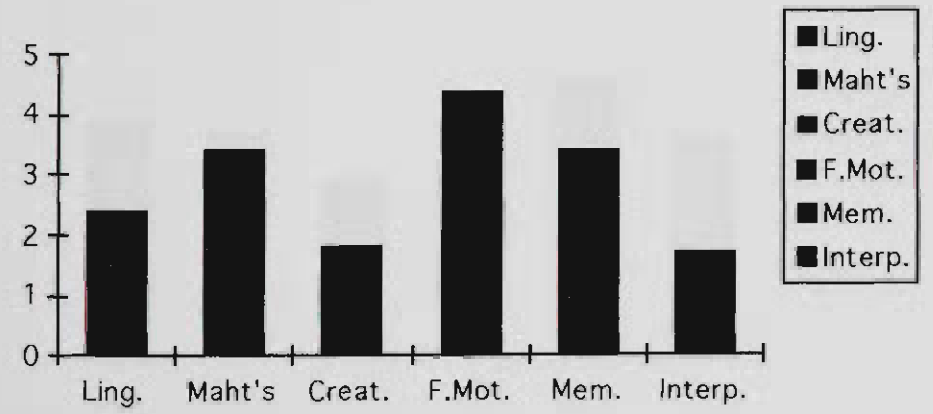
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F.Mot.
Mem.
Interp.

K. 10.


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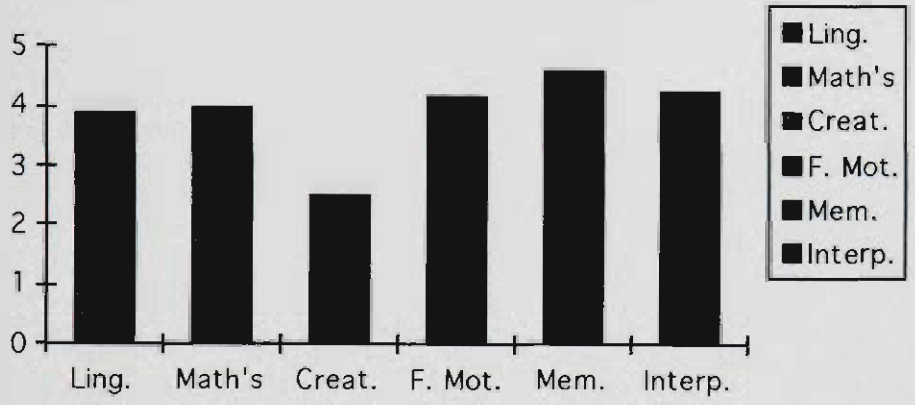
F. Mot.
Mem.
Interp.

Y1. 1.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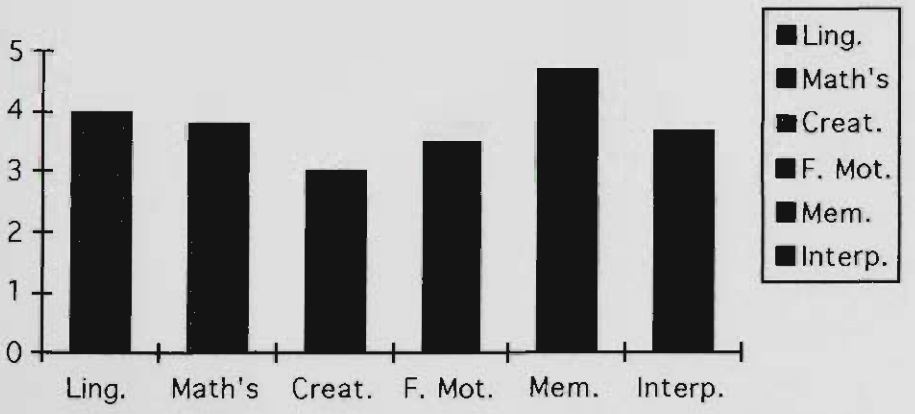
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F. Mot.
Mem.
Interp.

Y1. 3.


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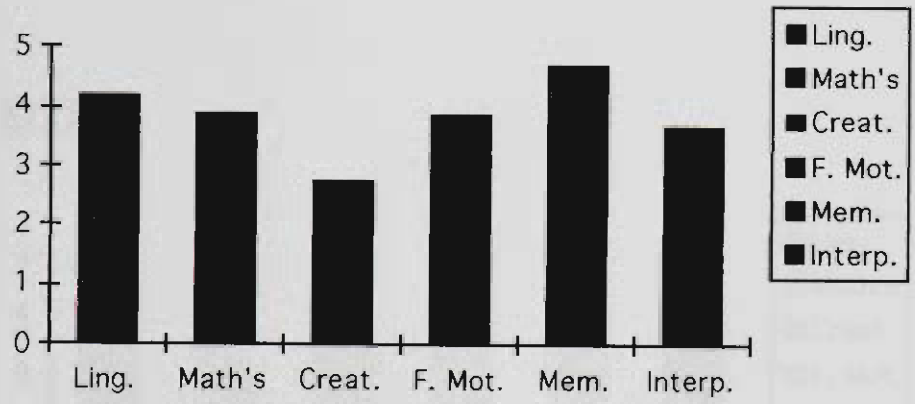
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Interp.
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Mem.
Interp.

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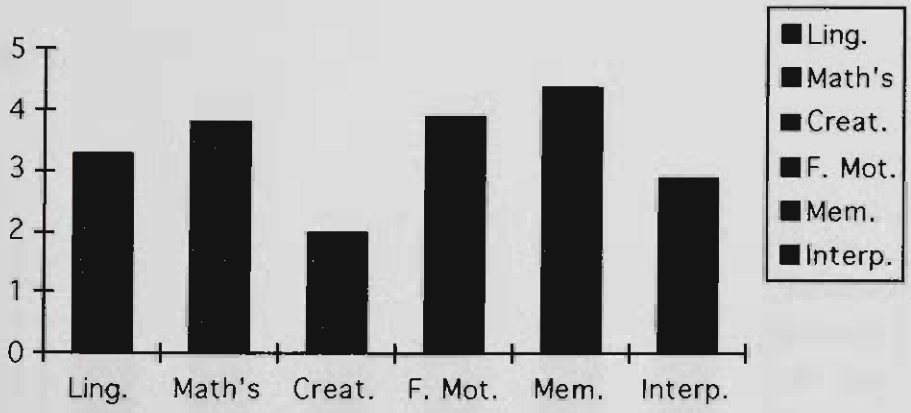
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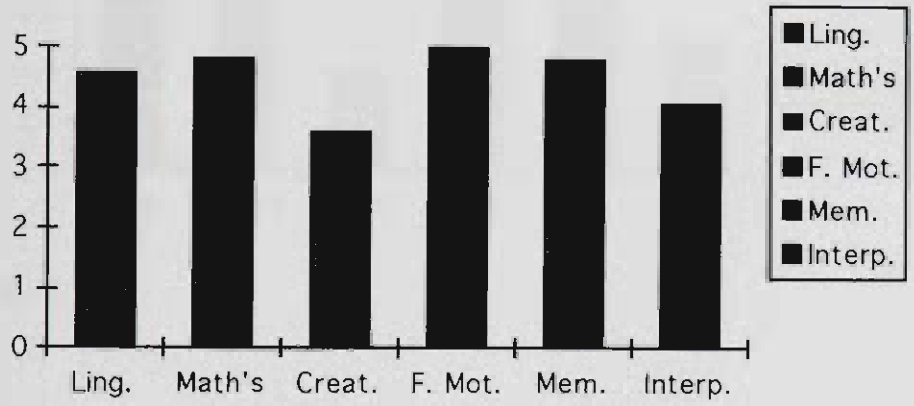
Mem.
Interp.

Y1. 6.

Y1. 7.

SITE C



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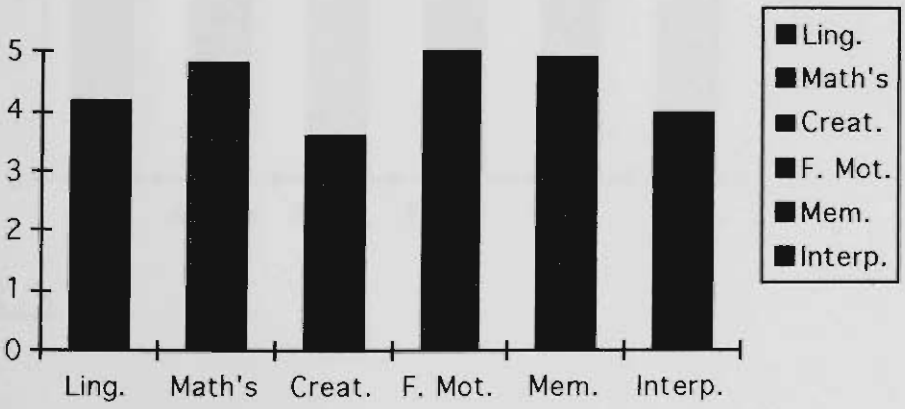

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4.2
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Ling.
math's
Creat.
F. Mot.
Mem.
Interp.
Ling.
math's
Creat.
F. Mot.
Mem.
Interp.

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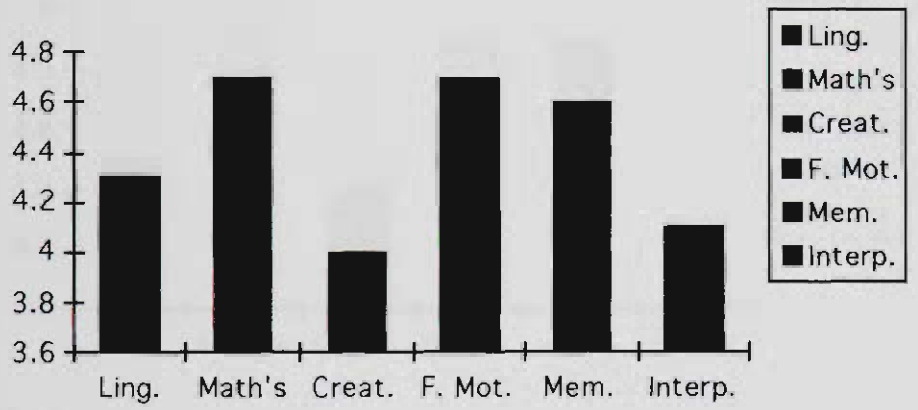
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Math's
Creat.
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Mem.
Interp.

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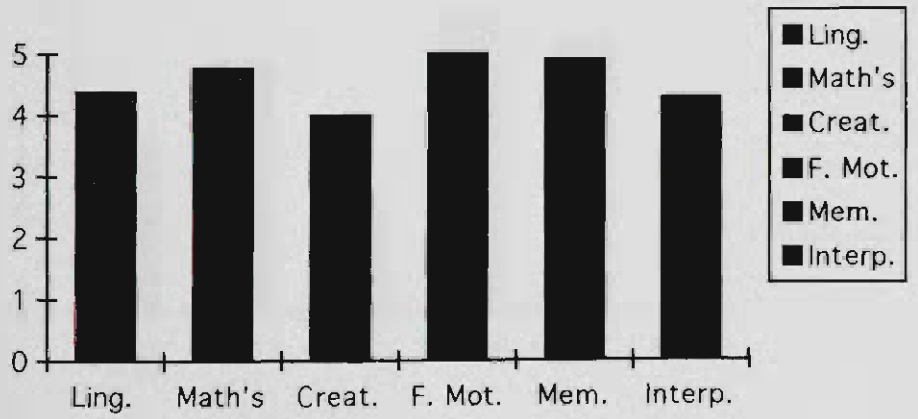
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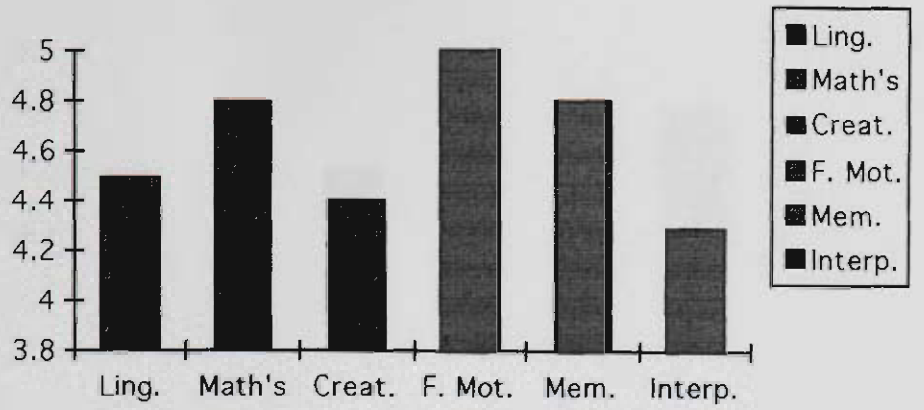
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Math's
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F. Mot.
Mem.
Interp.

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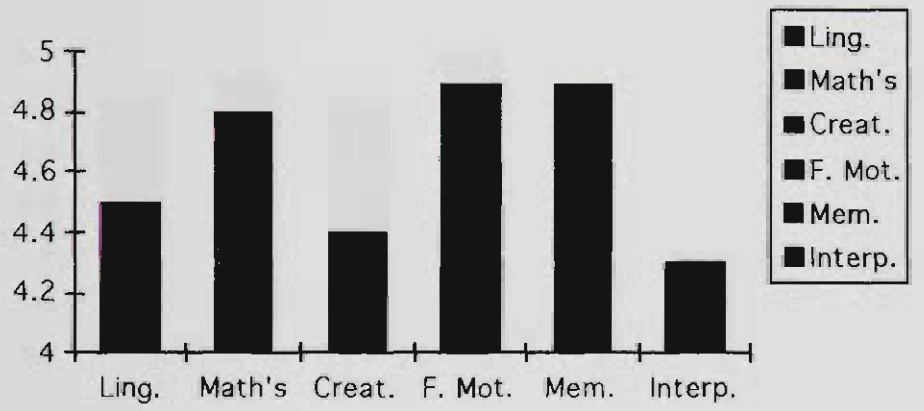
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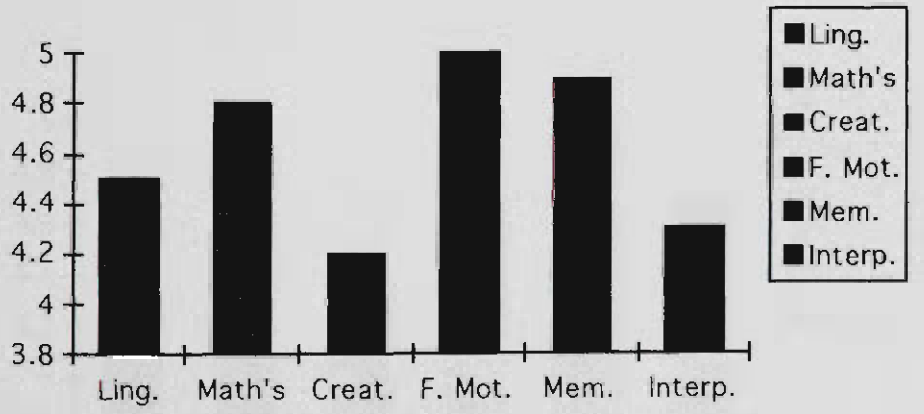
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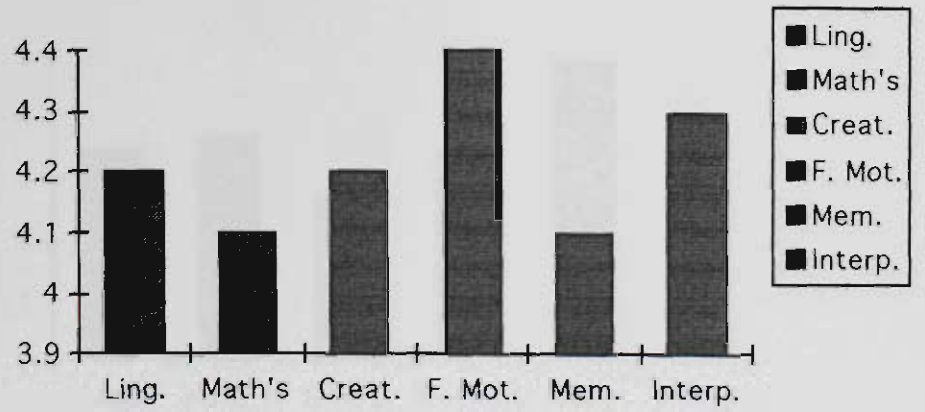
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Math's
Creat.
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Mem.
Interp.

K. 9.


4.8
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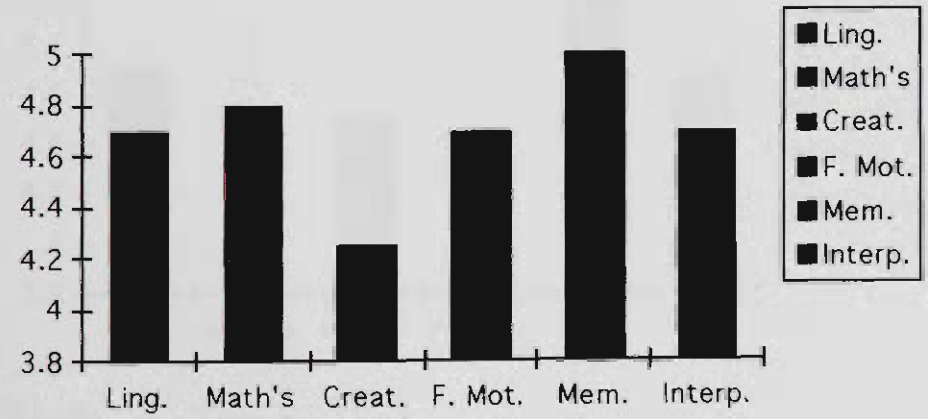
Interp.

K. 10.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Math's
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Interp.

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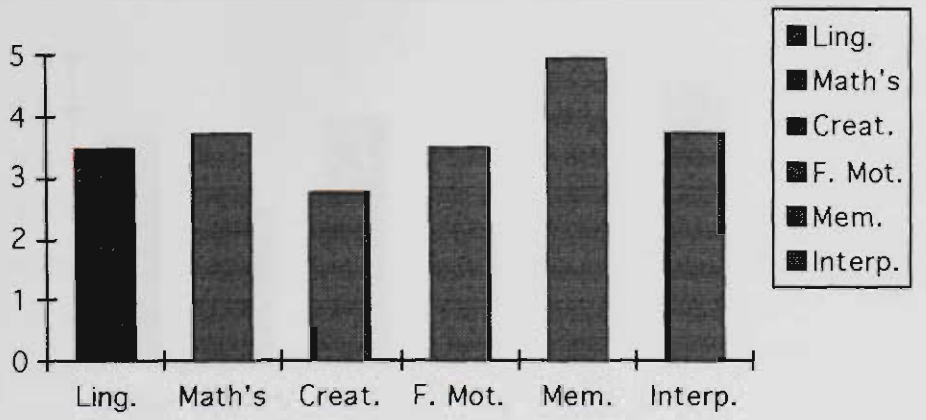
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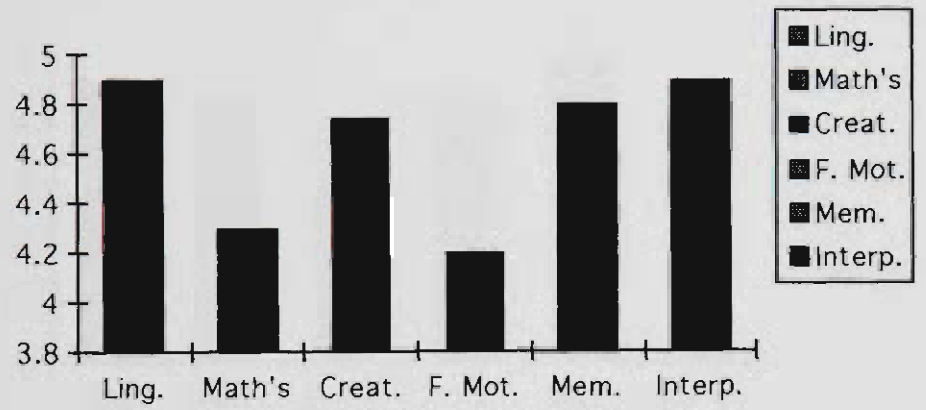
Interp.

Y1. 2.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Math's
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F. Mot.
Mem.
Interp.

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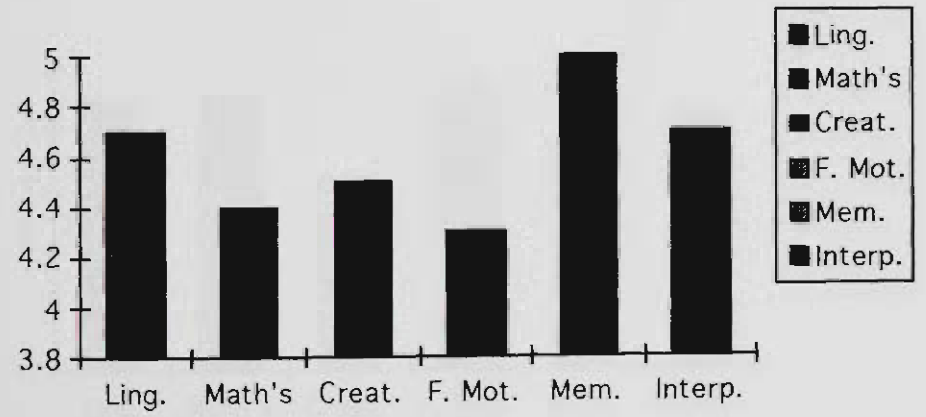
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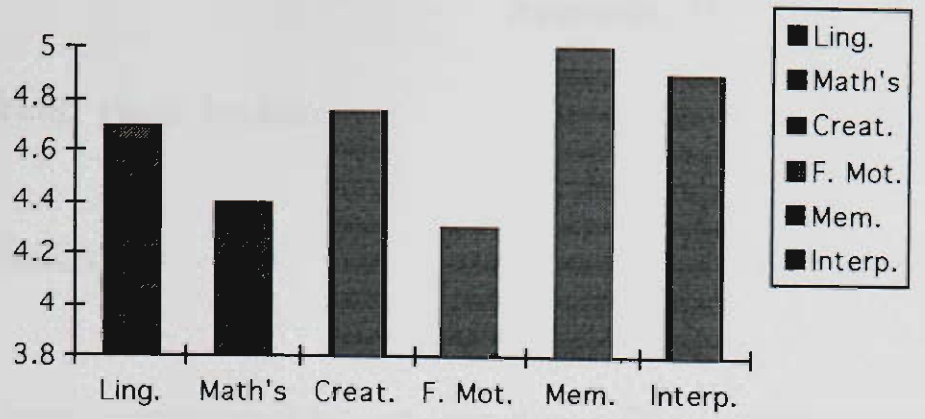
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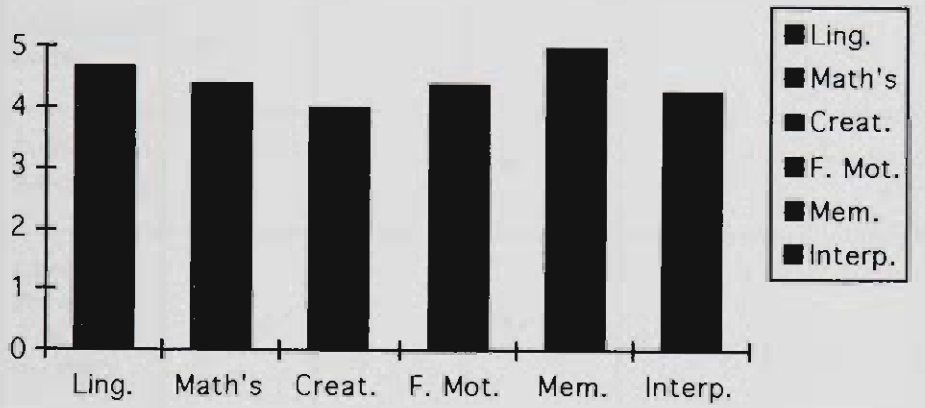
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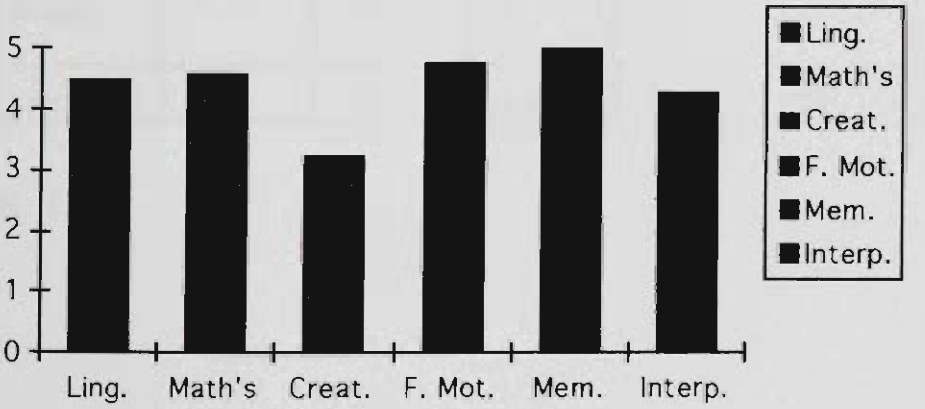
Interp.

Y1. 6.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Creat.
F. Mot.
Mem.
Interp.

Y1. 7.

Appendix 11

Total Pupil Profiles

SITE A

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	4	3	3	4
Observed by teacher	4	5	3	4	3	4	2
Portfolio Assess't	4	4	4	--	--	4	--
Child's Perception i) self ii) others	3 3	3 4	3 3	3 4	2 3	3 4	3 4
Parent / Community Perception	3	4	3	4	3	3	4
IPMAI Results	4	5	4	--	--	3	4
RATING	3.6	4.1	3.4	3.8	2.8	3.4	3.5

K. 1.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	4	4	4	4
Observed by teacher	5	5	4	4	4	4	3
Portfolio Assess't	4	5	3	--	--	4	--
Child's Perception i) self ii) others	3 4	4 5	3 3	3 3	3 4	3 4	4 4
Parent / Community Perception	4	4	3	3	3	3	3
IPMAI results	3	5	4	--	--	4	4
RATING	4	4.6	3.4	3.4	3.6	3.7	3.7

K.2.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	3	4	3	3	4	3	4
Observed by teacher	4	5	3	4	4	3	3
Portfolio Assess't	3	5	3	--	--	3	--
Child's Perception i) self ii) others	3 3	4 5	3 4	4 3	3 4	2 3	3 3

Parent / Community Perception	3	4	3	3	3	3	3
IPMAI Results	3	4	3	--	--	4	4
RATING	3.3	4.4	3.1	3.4	3.6	3	3.3

K.3.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	5	5	4	4	4	4	4
Observed by teacher	4	5	4	4	4	5	3
Portfolio Assess't	4	4	4	--	--	4	--
Child's Perception i) self ii) others	 4 4	 4 4	 3 4	 3 4	 3 4	 3 4	 4 3
Parent / Community Perception	3	4	3	4	4	4	4
IPMAI Results	4	5	4	--	--	4	4
RATING	4	4.4	3.7	3.8	3.8	4	3.7

K.4.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	5	3	2	4	2	3
Observed by teacher	4	4	4	3	4	3	4
Portfolio Assess't	3	4	3	--	--	3	--
Child's perception i) self ii) others	2 4	2 4	3 3	2 3	3 3	3 3	3 3
Parent / Community Perception	3	3	3	3	3	3	4
IPMAI Results	4	5	3	--	--	3	3
RATING	3.4	3.9	3.1	2.6	3.4	2.9	3.3

K.5.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	3	4	3	3	4	3	4
Observed by teacher	2	4	3	3	4	3	3
Portfolio Assess't	2	4	3	--	--	4	--
Child's perception i) self ii) others	2 2	3 3	3 3	3 3	3 4	3 4	3 3

Parent / Community Perception	2	4	4	3	3	3	4
IPMAI Results	3	5	3	--	--	4	4
RATING	2.2	3.9	3.1	3	3.6	3.4	3.5

K.6.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	3	4	3	2	4	3	3
Observed by teacher	2	3	2	3	3	2	3
Portfolio Assess't	2	3	3	--	--	3	--
Child's Perception i) self ii) others	 3 3	 3 3	 3 3	 3 3	 3 4	 3 3	 3 3
Parent / Community Perception	2	3	3	3	3	2	3
IPMAI Results	3	3	3	--	--	3	3
RATING	2.6	3.1	2.9	2.8	3.4	2.7	3

K.7.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	5	4	3	3	3	4
Observed by teacher	4	5	3	3	4	4	4
Portfolio Assess't	4	4	4	--	--	3	--
Child's Perception i) self ii) others	3 3	3 4	3 4	3 3	3 4	3 4	3 3
Parent / Community Perception	3	4	4	3	3	3	4
IPMAI Results	4	5	4	--	--	4	4
RATING	3.6	4.3	3.7	3	3.4	3.4	3.7

K.8.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by reaearcher	4	5	4	3	4	3	4
Observed by teacher	3	5	4	3	4	3	4
Portfolio Assess't	3	4	3	--	--	3	--
Child's Perception i) self ii) others	2 3	4 5	3 4	3 3	3 4	3 4	3 3

Parent / Community Perception	3	4	4	3	4	3	4
IPMAI Results	3	5	4	--	--	3	4
RATING	3	4.6	3.7	3	3.8	3.1	3.7

K.10.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	3	3	4	4
Observed by teacher	3	4	4	3	3	4	3
Portfolio Assess't	3	4	4	--	--	3	--
Child's Perception i) self ii) others	3 3	3 4	3 4	3 3	2 3	3 4	3 3
Parent / Community Perception	4	4	3	3	3	3	4
IPMAI Results	4	5	4	--	--	4	4
RATING	3.4	4	3.7	3	2.8	3.6	3.5

K.11.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	4	4	4	4
Observed by teacher	4	4	4	4	4	4	3
Portfolio Assess't	3	4	4	--	--	4	--
Child's Perception i) self ii) others	3 4	3 4	3 3	3 4	3 4	4 4	3 3
Parent / Community Perception	3	3	3	4	3	3	4
IPMAI Results	4	4	4	--	--	4	4
RATING	3.6	3.7	3.6	3.8	3.6	3.9	3.5

Y1. 1.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	3	4	3	3
Observed by teacher	4	4	3	4	4	3	4
Portfolio Assess't	4	4	3	--	--	4	--
Child's Perception i) self ii) others	3 4	3 4	3 3	3 3	3 4	3 4	3 3

Parent/ Community Perception	3	4	3	3	4	3	3
IPMAI Results	4	4	4	--	--	3	4
RATING	3.7	3.9	3.3	3.2	3.8	3.3	3.3

Y1. 2.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by reaearcher	4	4	4	4	4	5	4
Observed by teacher	4	3	4	4	4	5	4
Portfolio Assess't	4	3	4	--	--	4	--
Child's Perception i) self ii) others	3 4	3 4	3 3	3 4	4 4	4 4	3 3
Parent / Community Perception	4	4	4	3	4	4	4
IPMAI Results	4	5	4	--	--	4	4
RATING	3.9	3.7	3.7	3.6	4	4.3	3.7

Y1. 3.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	3	4	3	4
Observed by teacher	4	5	3	3	4	2	3
Portfolio Assess't	4	4	3	--	--	3	--
Child's Perception i) self ii) others	3 4	4 4	3 4	3 3	3 3	3 3	3 3
Parent / Community Perception	4	5	4	3	3	3	4
IPMAI Results	5	5	4	--	--	3	4
RATING	4	4.2	3.6	3	3.4	2.7	3.5

Y1. 4.

	Logical	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	5	4	4	4	3	5	4
Observed by teacher	4	4	3	4	4	4	4
Portfolio Assess't	4	4	3	--	--	4	--
Child's Perception i) self ii) others	3 4	3 4	3 3	3 3	3 4	3 4	3 3

Parent / Community Perception	4	4	4	4	4	4	4
IPMAI Results	4	4	4	--	--	4	4
RATING	4	3.9	3.4	3.6	3.4	4	3.7

Y1. 6.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	4	4	4	4	4	4
Observed by teacher	4	3	4	4	4	5	4
Portfolio Assess't	3	3	4	--	--	4	--
Child's Perception i) self ii) others	 3 3	 3 4	 3 4	 3 3	 3 4	 3 4	 3 3
Parent / Community Perception	3	3	3	3	4	3	3
IPMAI Results	3	4	4	--	--	4	4
RATING	3.3	3.4	3.7	3.4	3.8	3.9	3.5

Y1. 7.

SITE C

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	5	4	3	4	4	4
Observed by teacher	5	5	4	4	4	5	4
Portfolio Assess't	4	5	4	--	--	4	--
Child's Perception i) self ii) others	3 4	3 5	3 3	3 3	3 4	3 4	4 3
Parent / Community Perception	4	4	4	3	4	4	4
IPMAI Results	5	5	4	--	--	4	4
RATING	4.1	4.6	3.7	3.2	3.8	4	3.8

K.3.

	Linguistic	Logical / Maths	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	5	4	3	4	4	4
Observed by teacher	4	5	4	3	4	4	4
Portfolio Assess't	4	5	3	--	--	4	--
Child's Perception i) self ii) others	3 3	3 5	3 4	3 3	3 4	4 4	3 3

Parent / Community Perception	4	5	4	4	3	4	4
IPMAI Results	4	5	4	--	--	4	4
RATING	3.7	4.7	3.7	3.2	3.6	4	3.7

K. 5.

	Linguistic	Logical / Math's	Spatial	Musical	Bodily / Kinesthetic	Inter-personal	Intra-personal
Observed by researcher	4	5	4	3	4	4	4
Observed by teacher	4	5	4	4	4	4	4
Portfolio Assess't	4	5	4	--	--	4	--
Child's Perception i) self ii) others	3 4	4 5	3 3	3 3	3 4	3 4	3 3
Parent / Community Perception	4	5	3	3	4	4	3
IPMAI Results	5	5	4	--	--	4	4
RATING	4	4.9	3.6	3.2	3.8	3.9	3.5

K.7.

Appendix 12

Saturday Schools Interview Items:

1. Why do children attend Saturday Schools?

2. What age span is catered for at the school?

3. What curriculum is followed?

4. How are the classes grouped / arranged?

5. How are the pupils chosen for such an arrangement?

6. What do you see as characteristics of bright children?

7. How are you able to identify a young - (<5 / 6years) gifted child?

8. How do you cater for them?

9. Are children sometimes gifted in more than one area?

10. How many children attend this school?

11. What is the proportion of boys : girls?

12. What is the usual length of time that a student attends?

13. How many teachers are at this school?

14. What training do your teachers have?

15. How long is a Saturday School day?

Appendix 13

Comparison of IPMAI, Peabody Picture Vocabulary Test and Draw-a-Man Test Results for each student.

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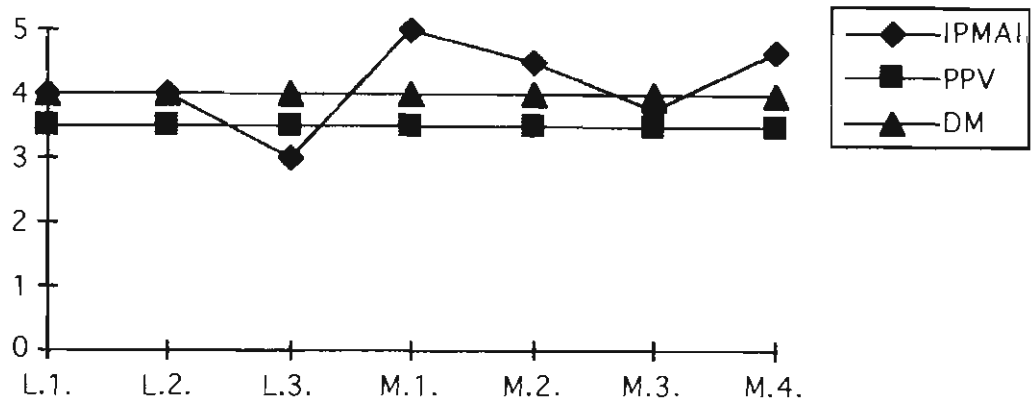

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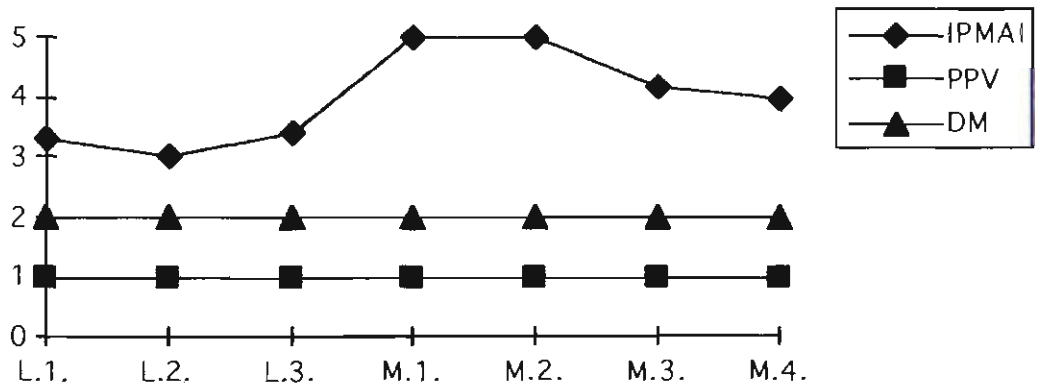

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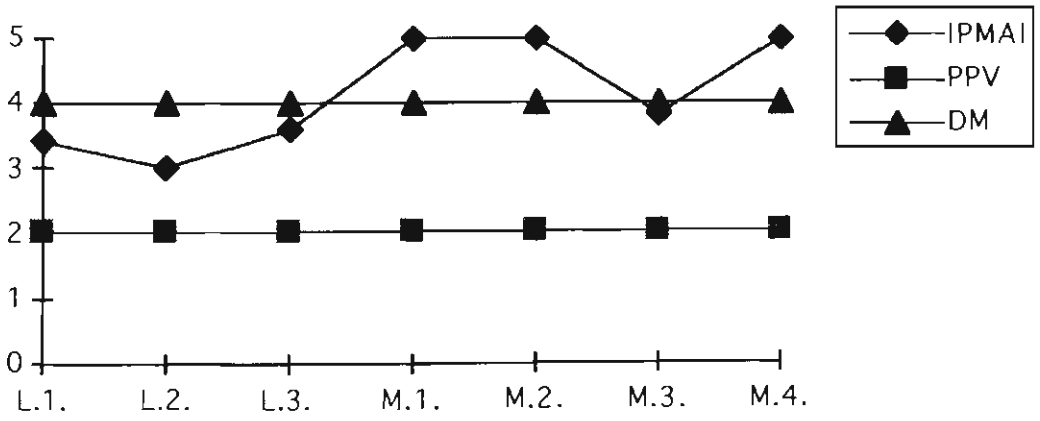

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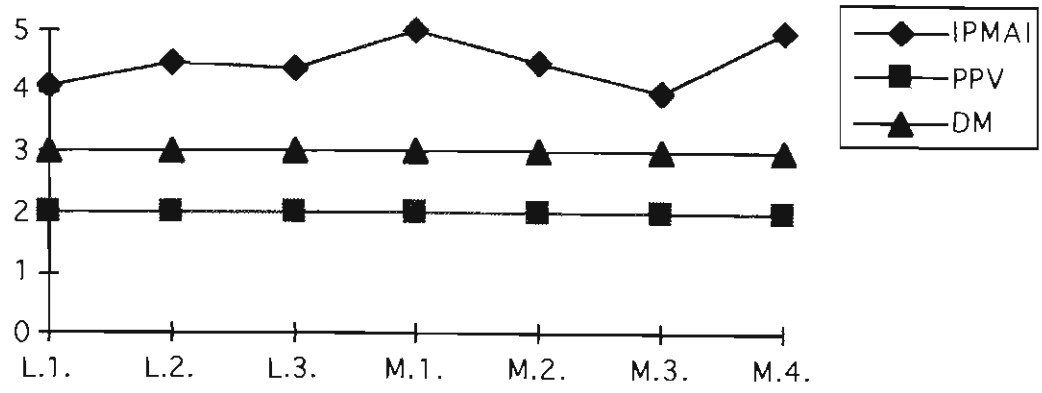
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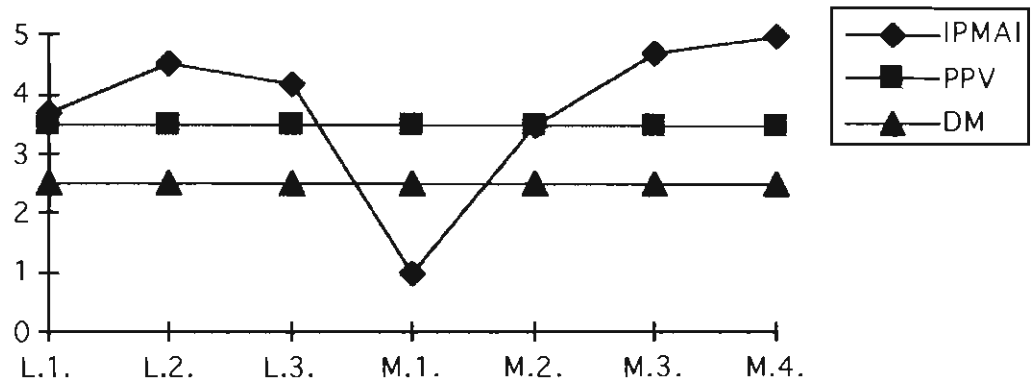
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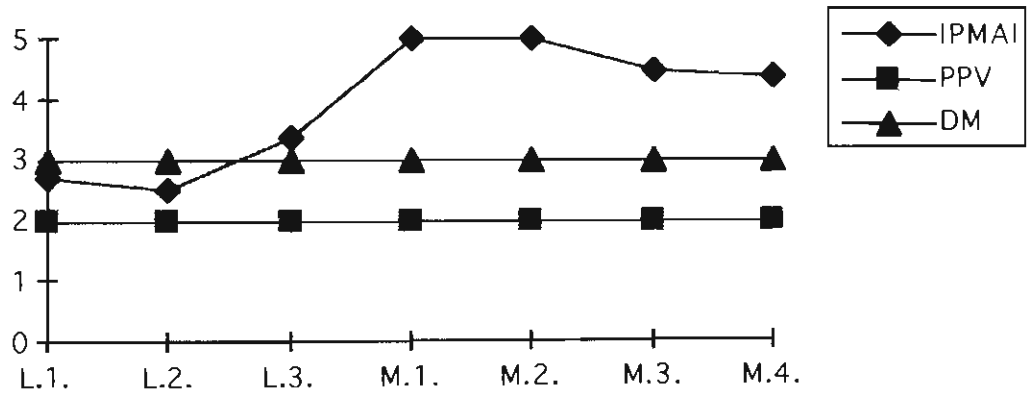
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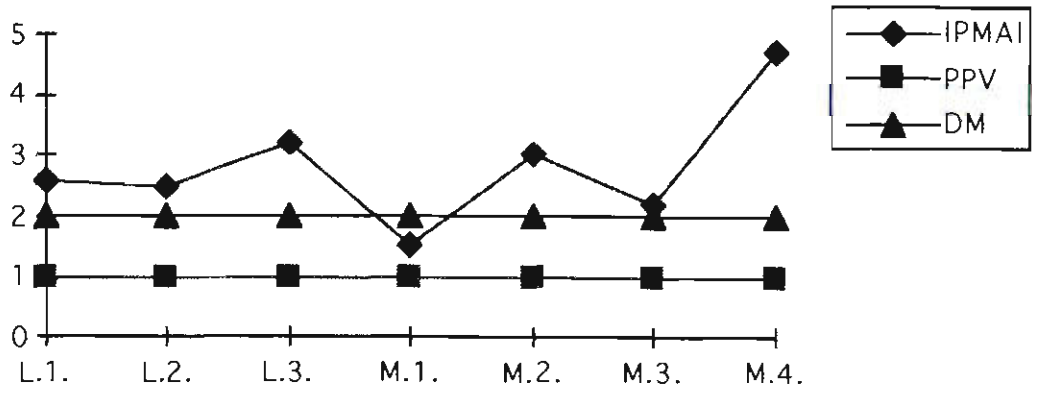
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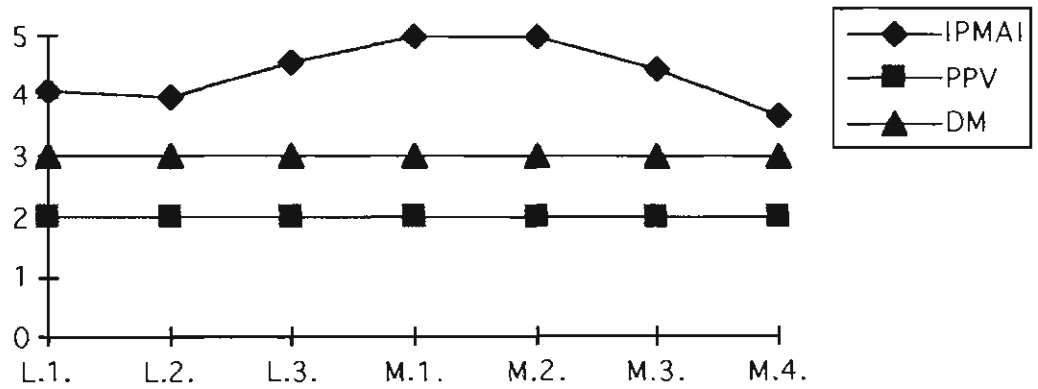
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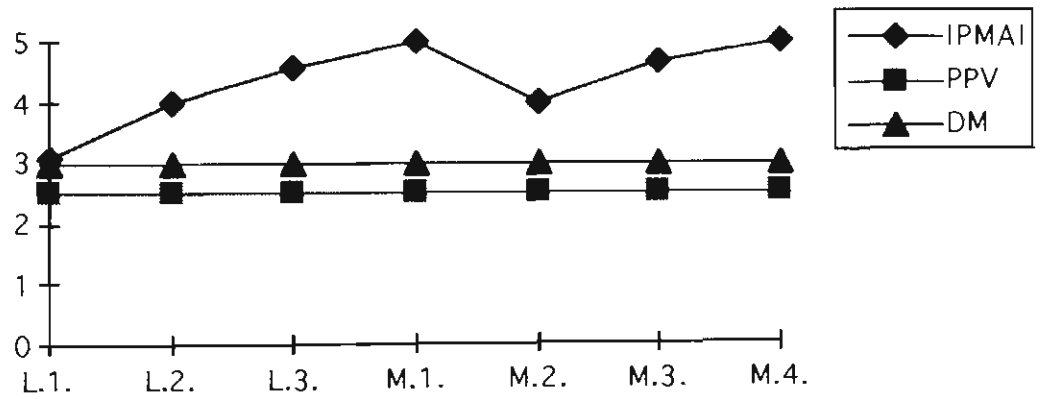
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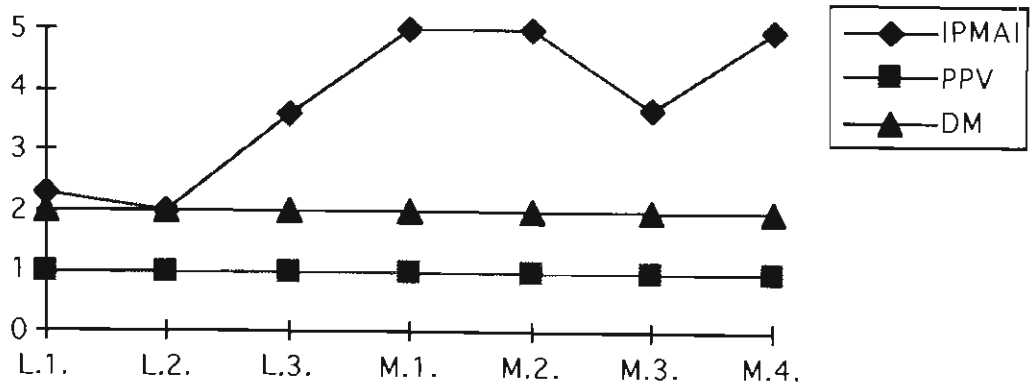

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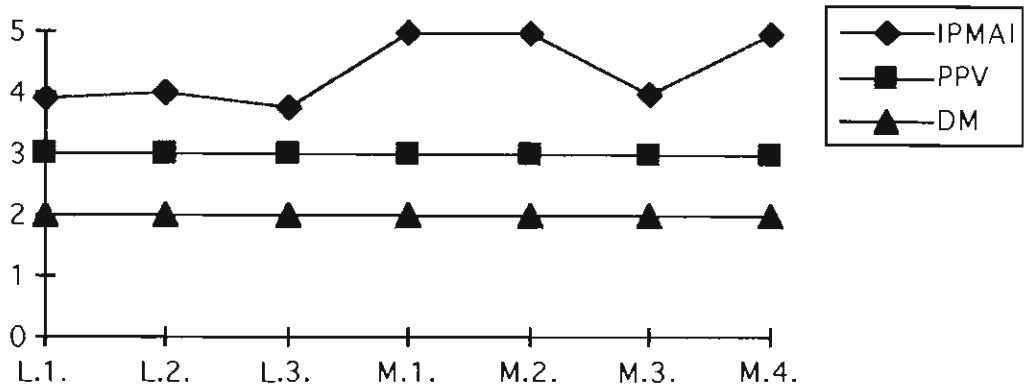

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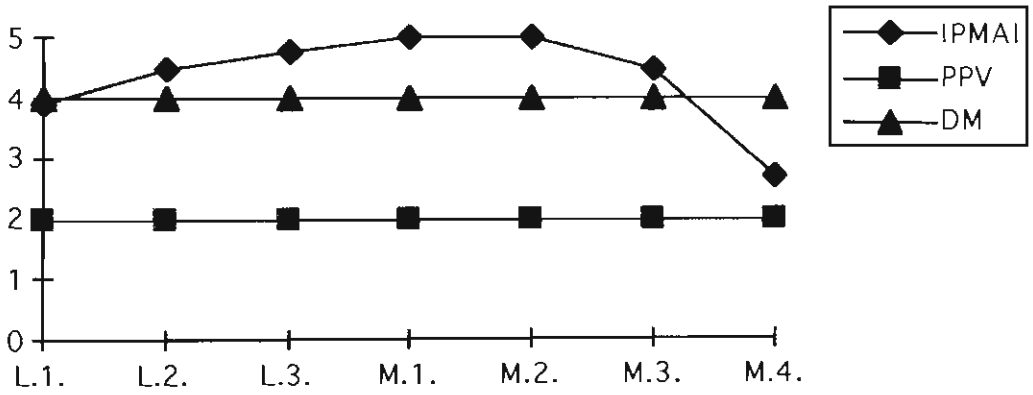

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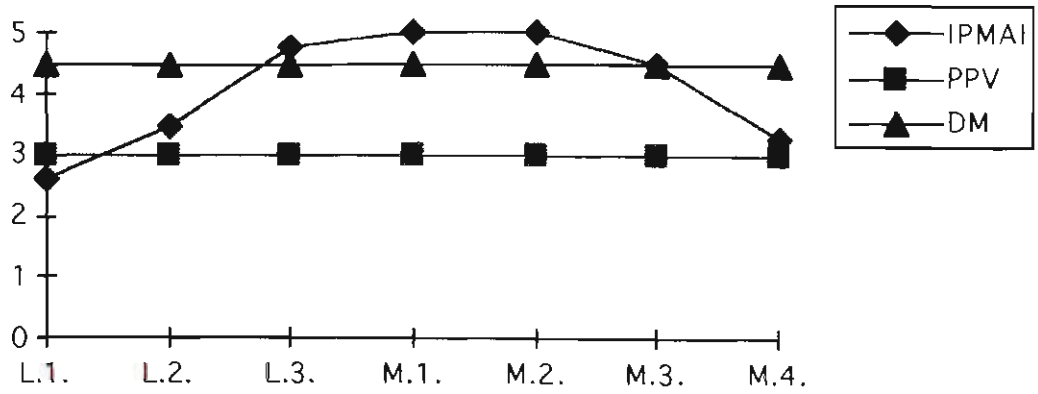

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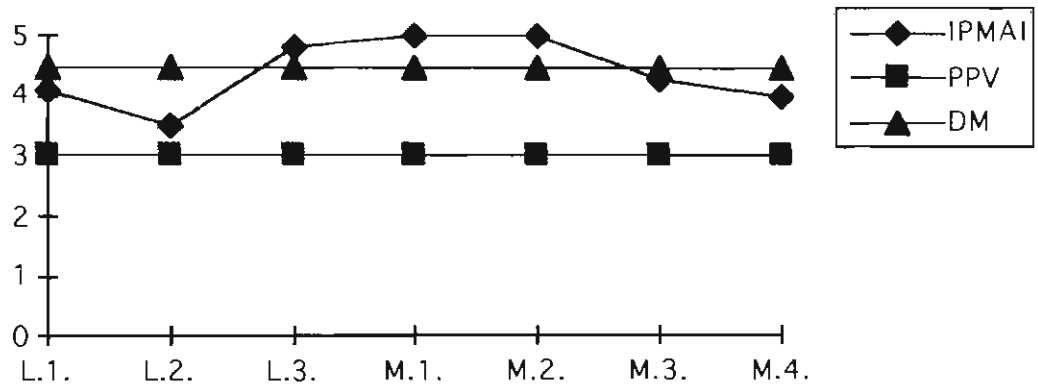

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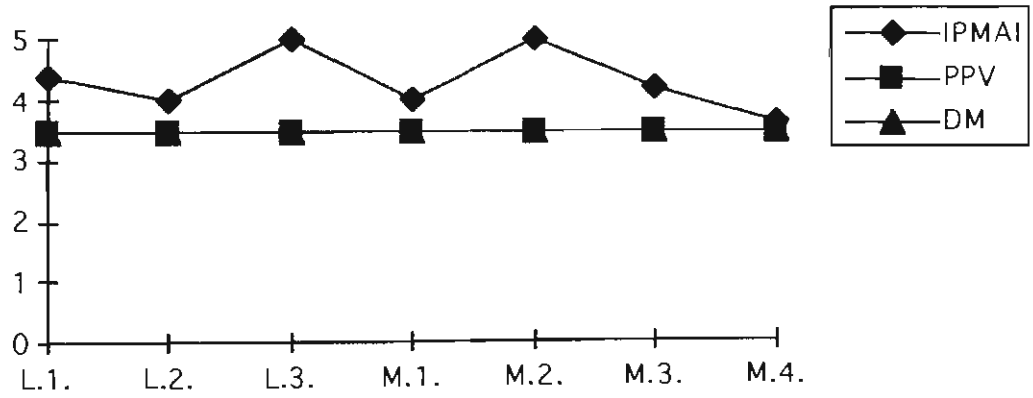

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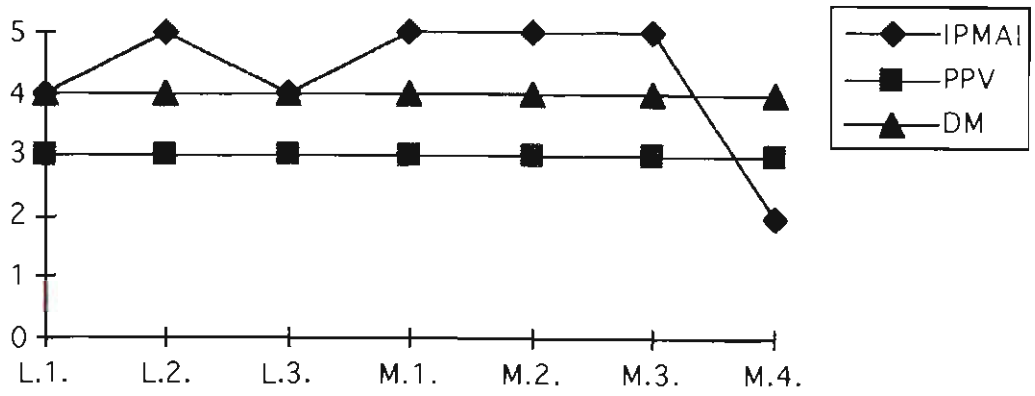

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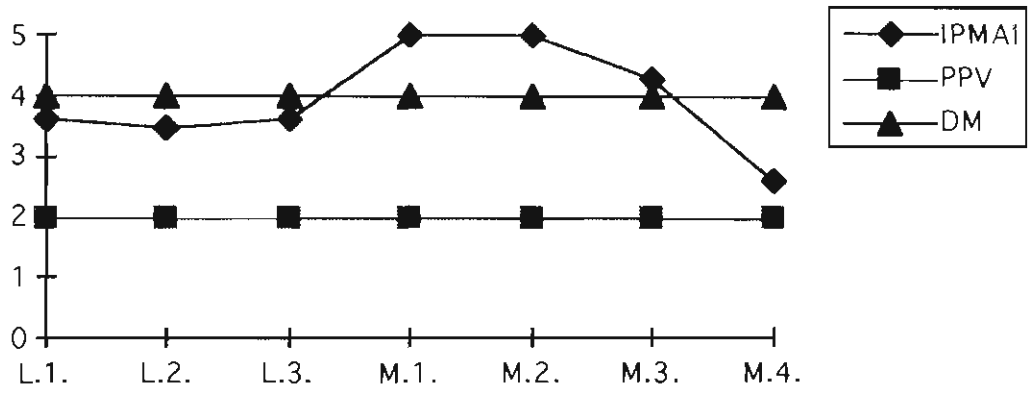

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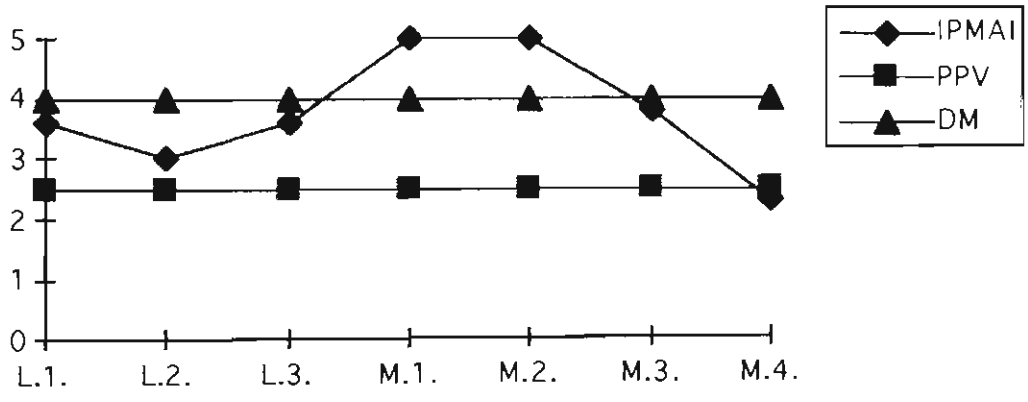

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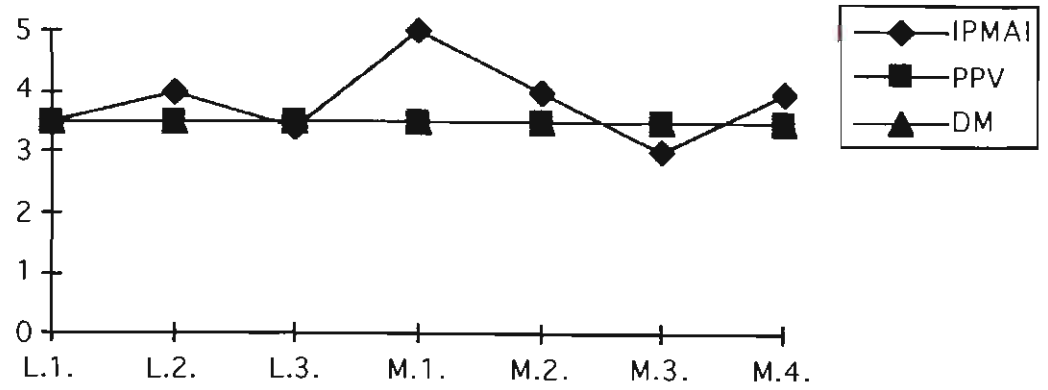

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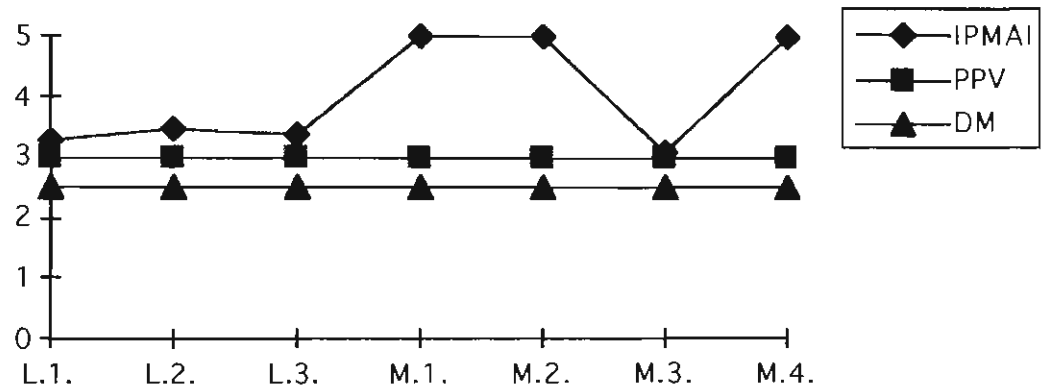

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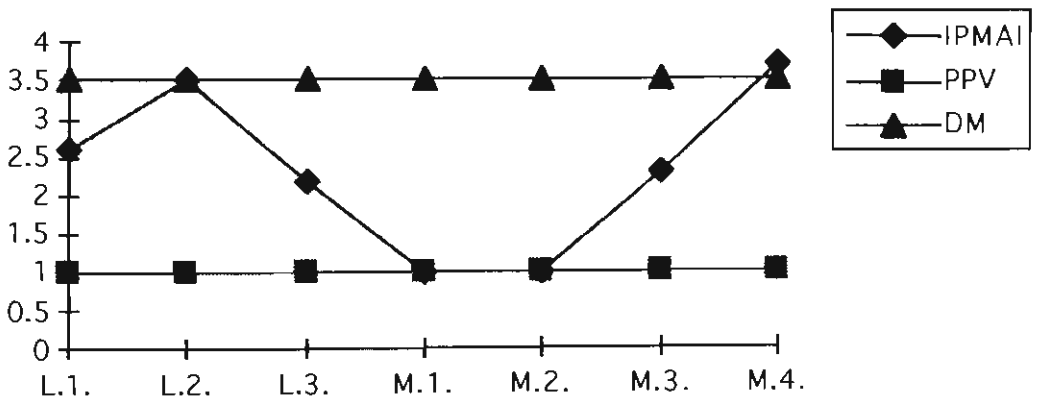

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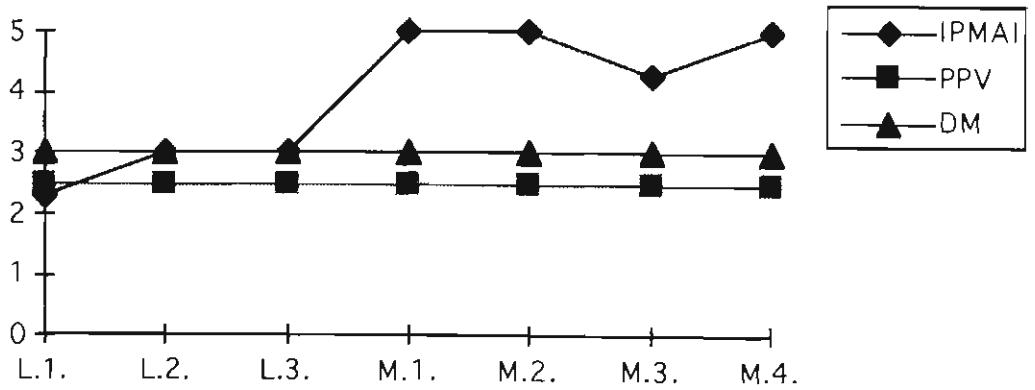
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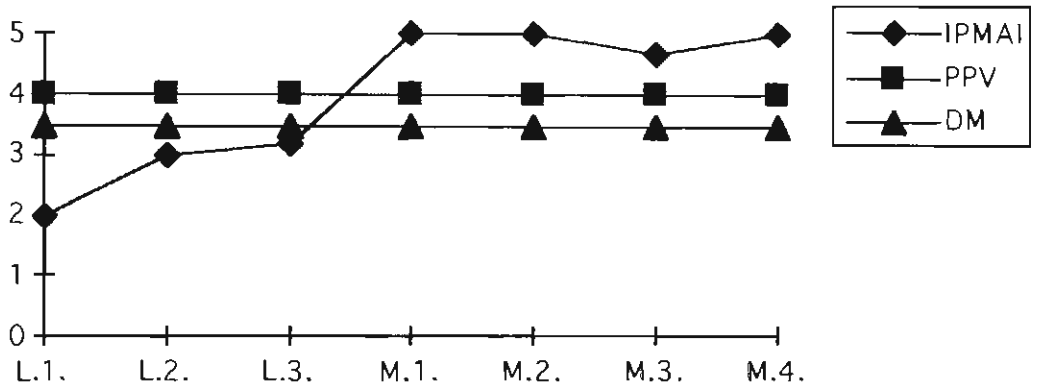
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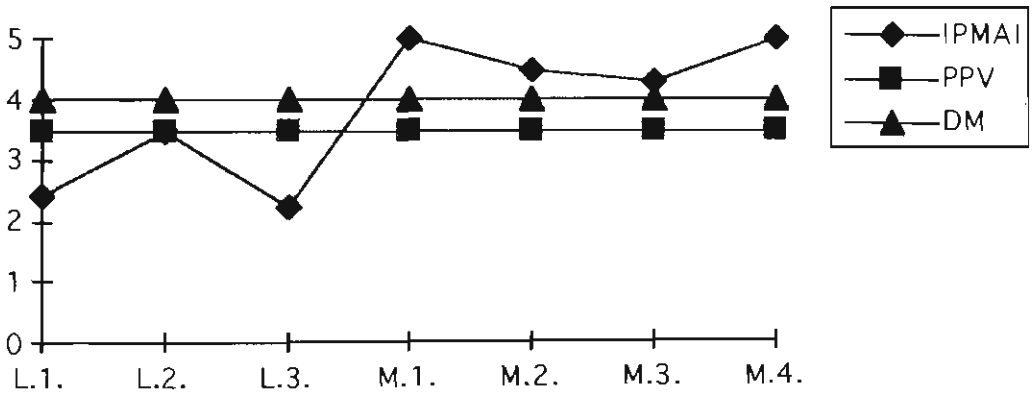
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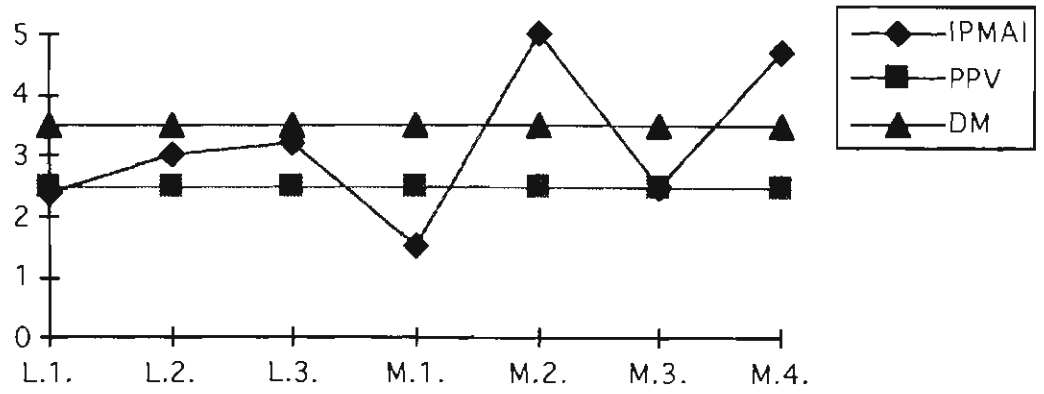
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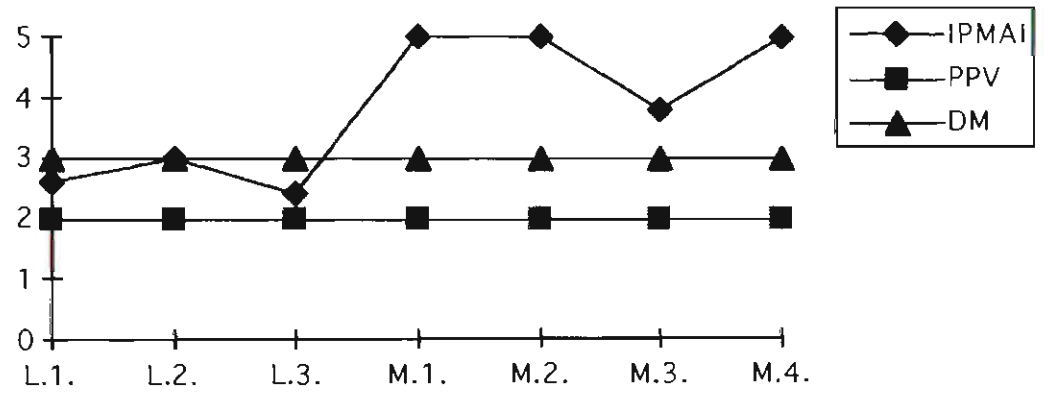
K.7/B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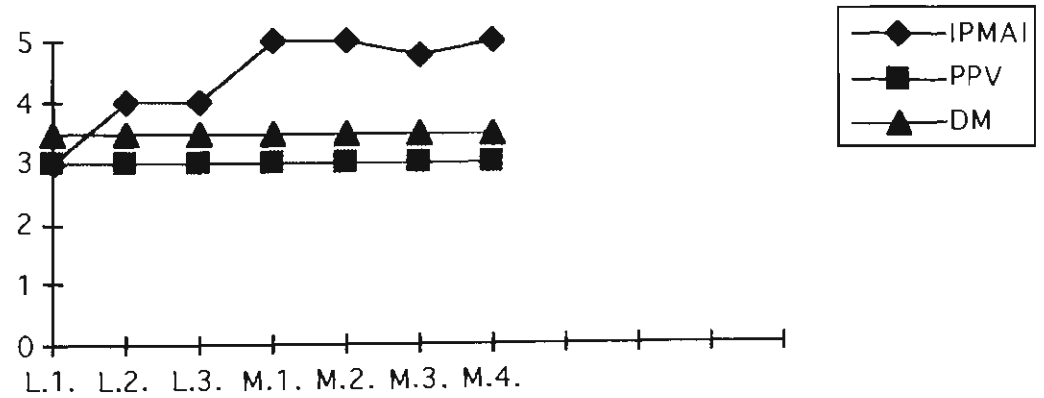
K.8/B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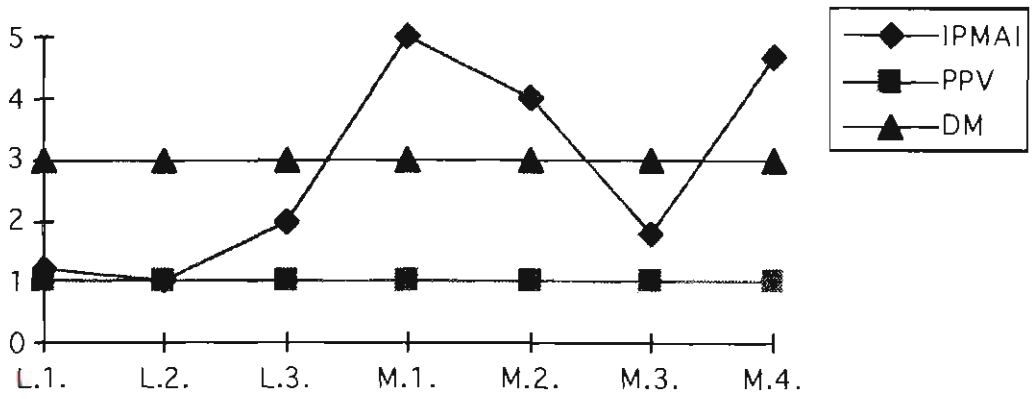

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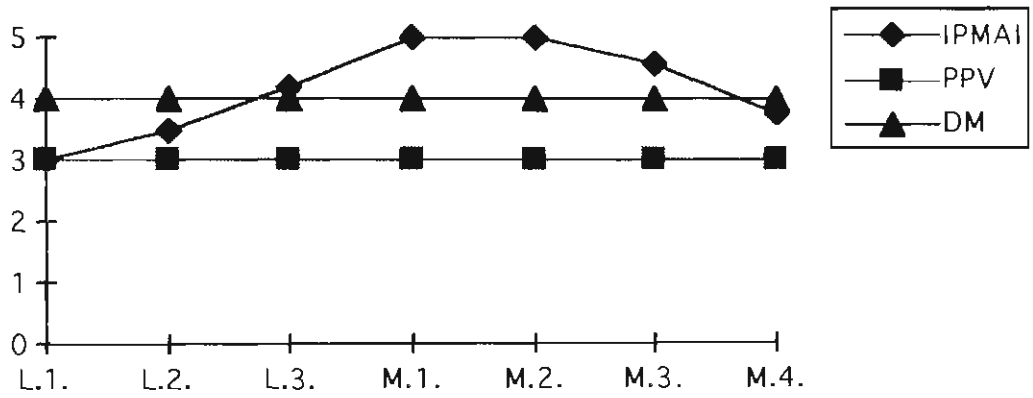

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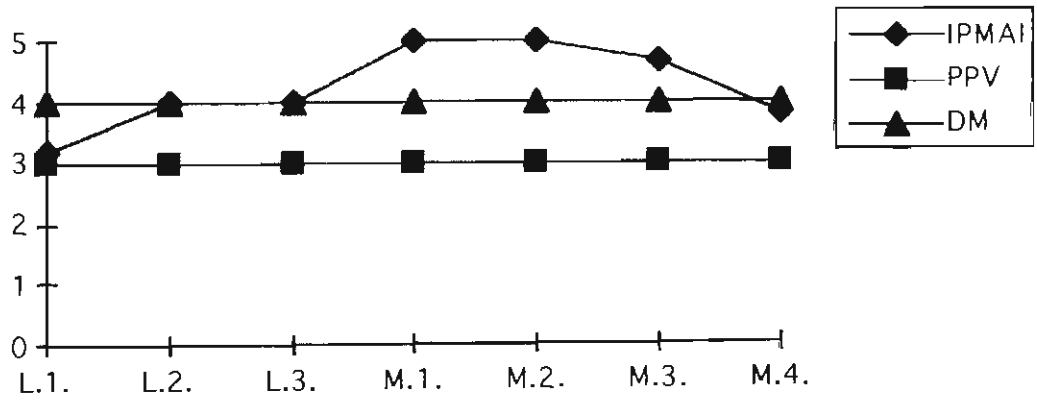

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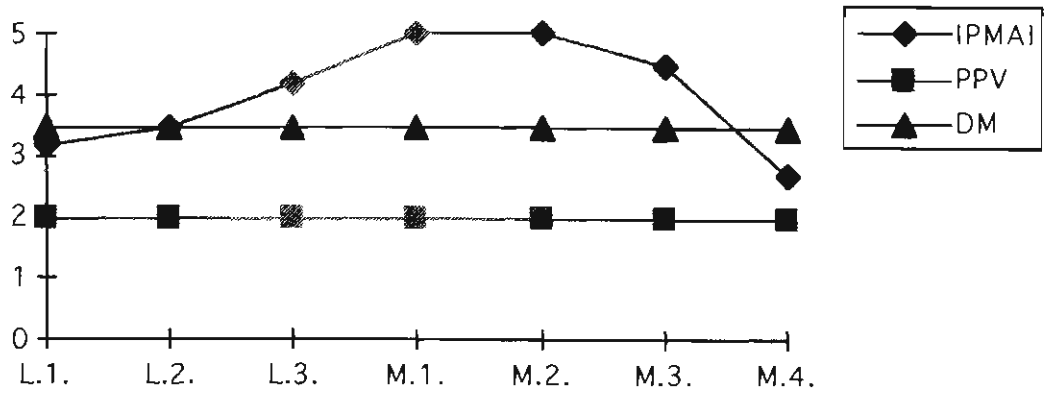

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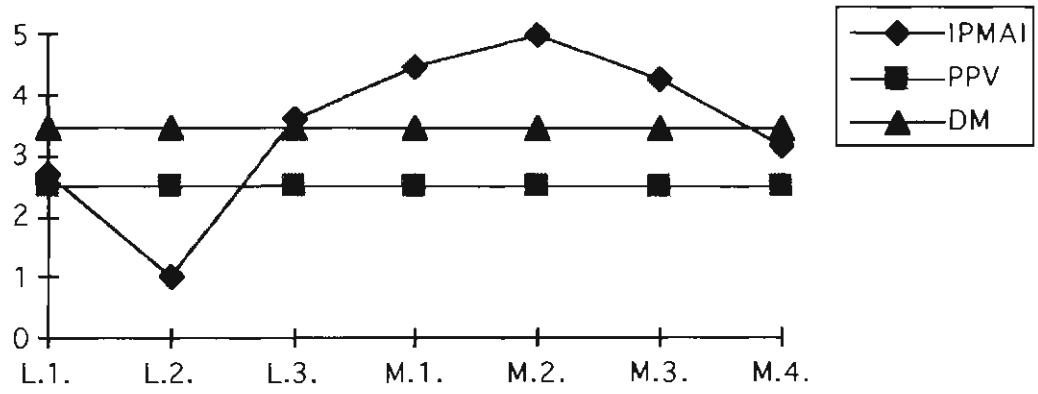

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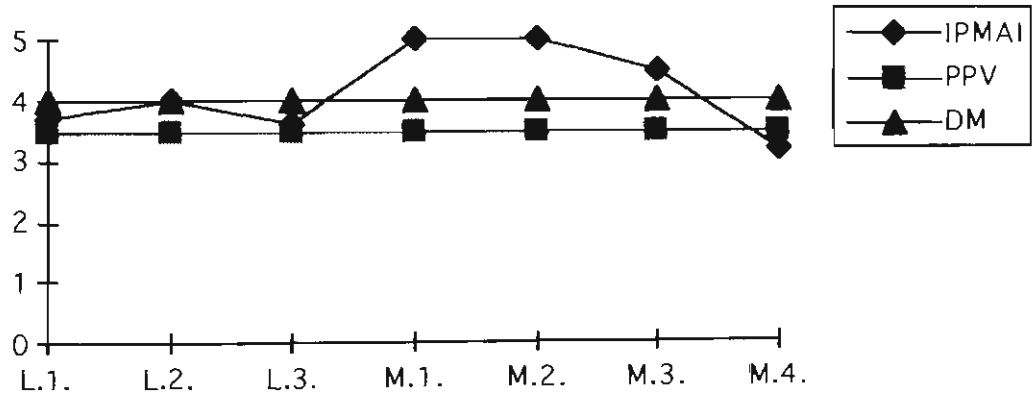

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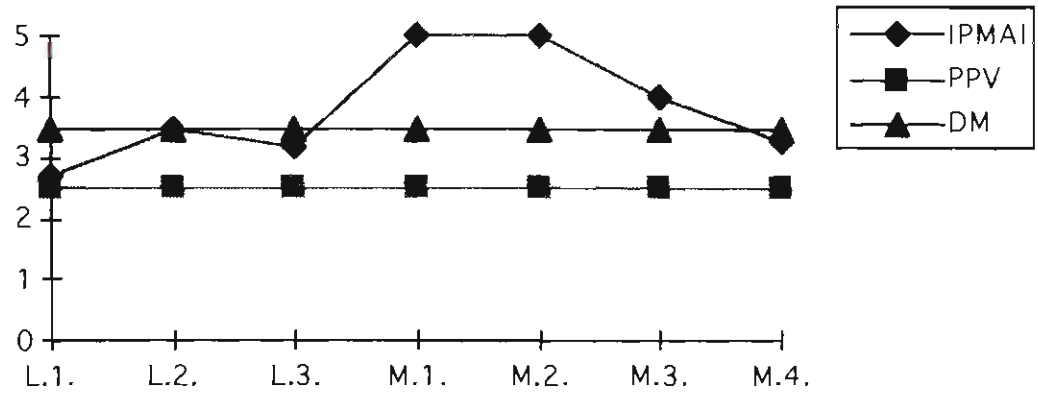
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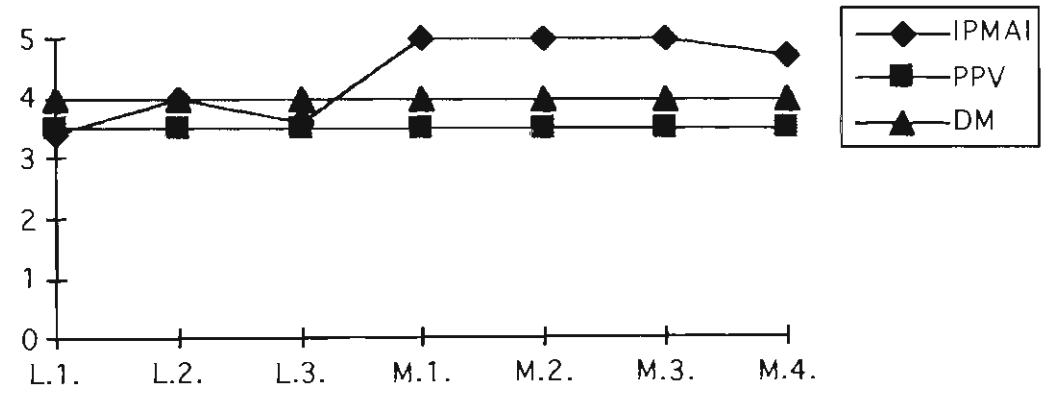
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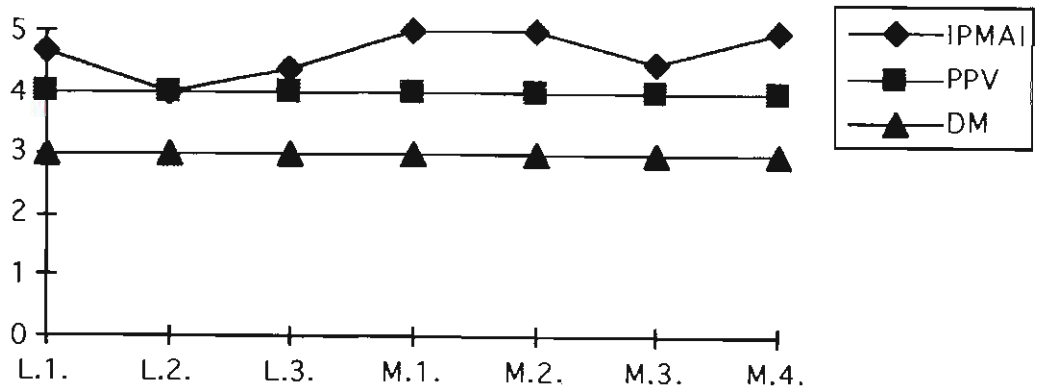

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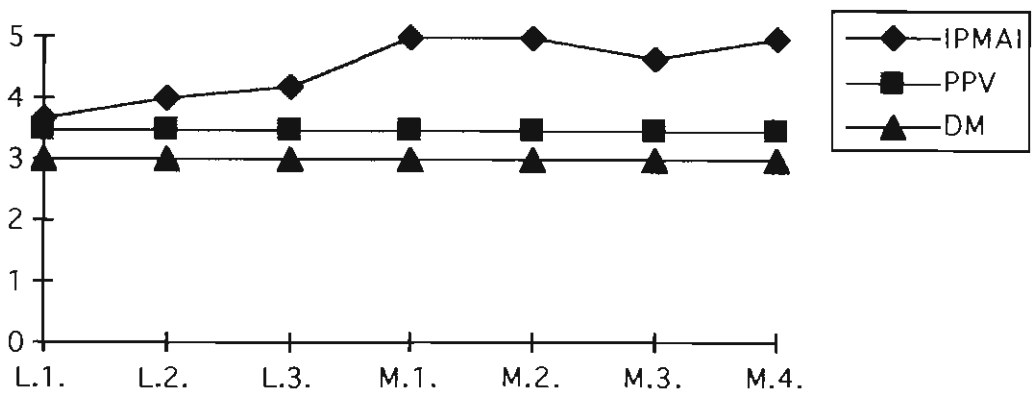

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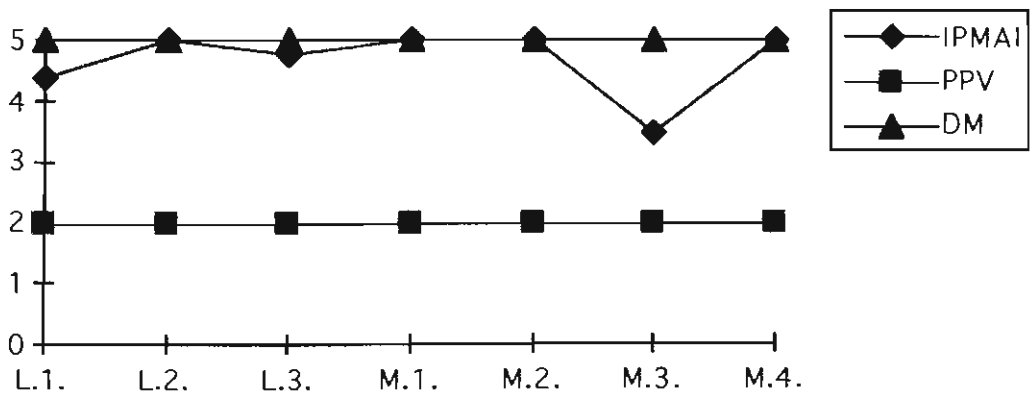

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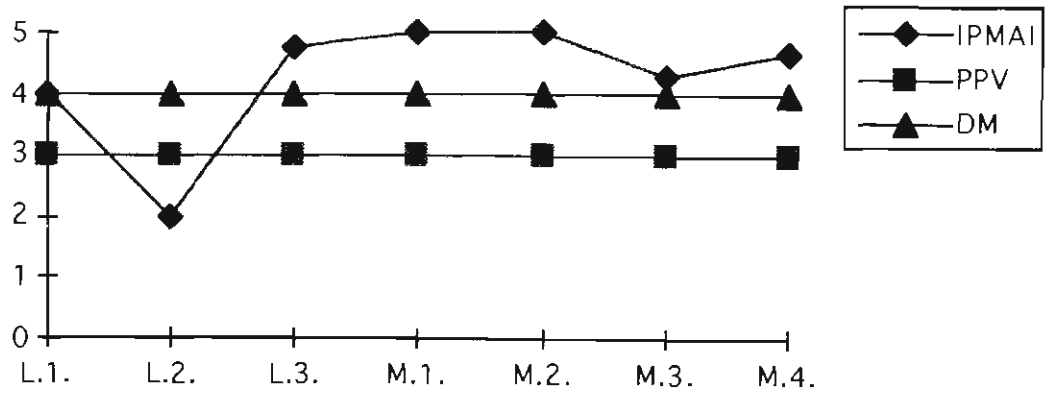
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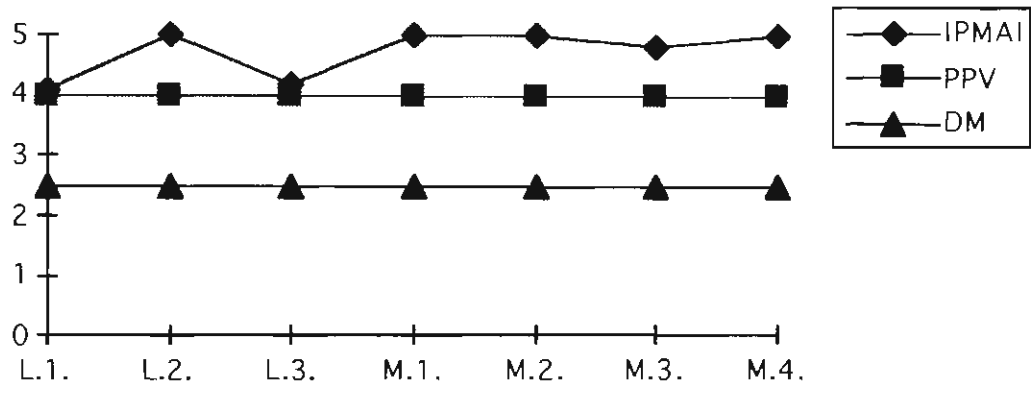
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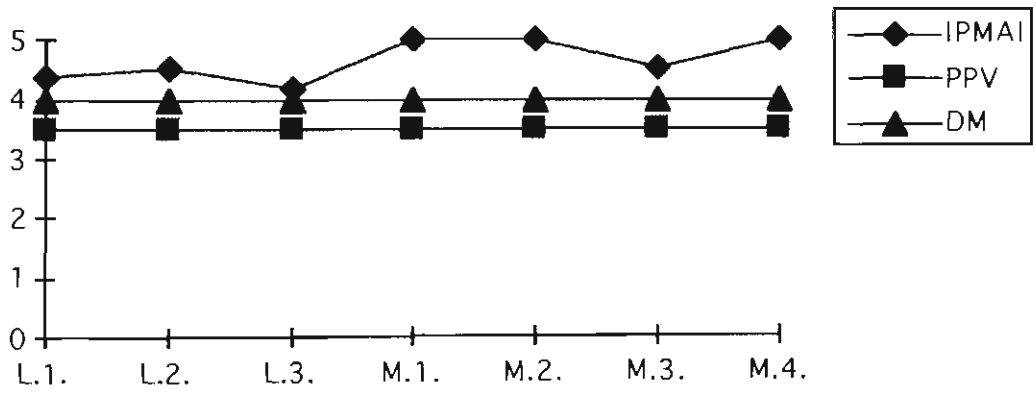
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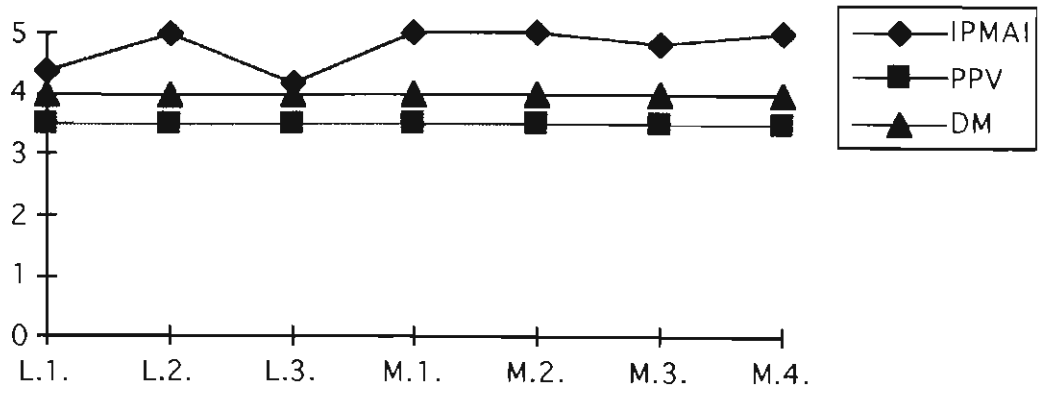
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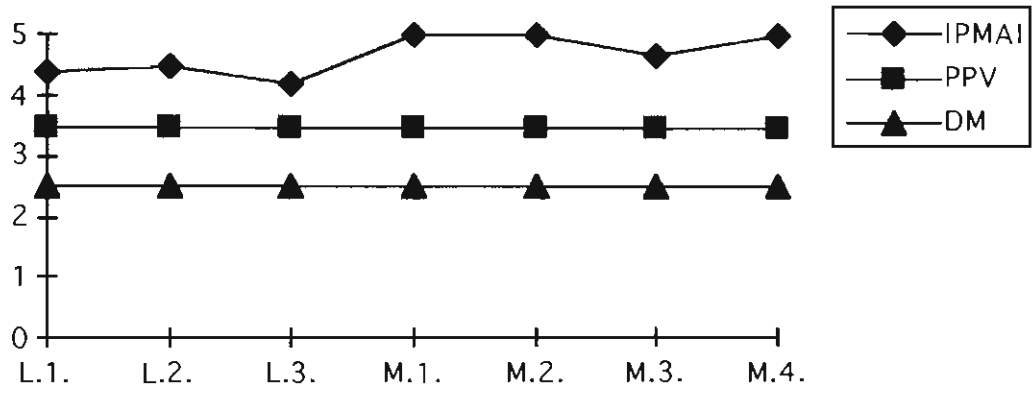
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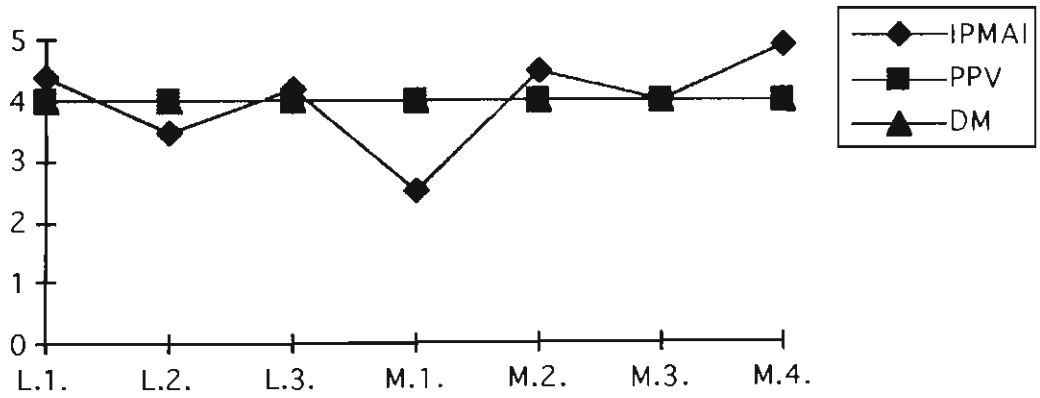
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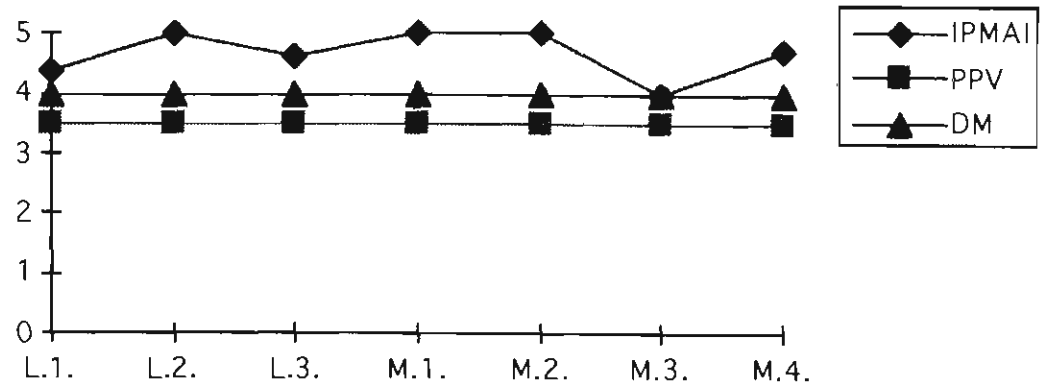

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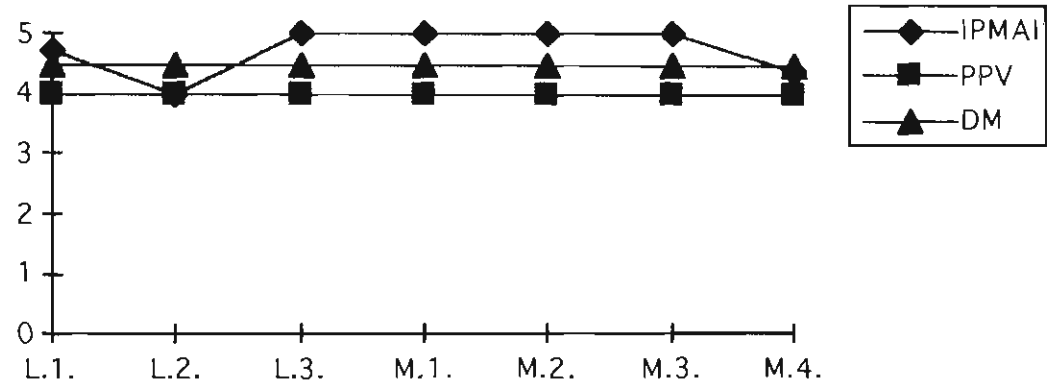

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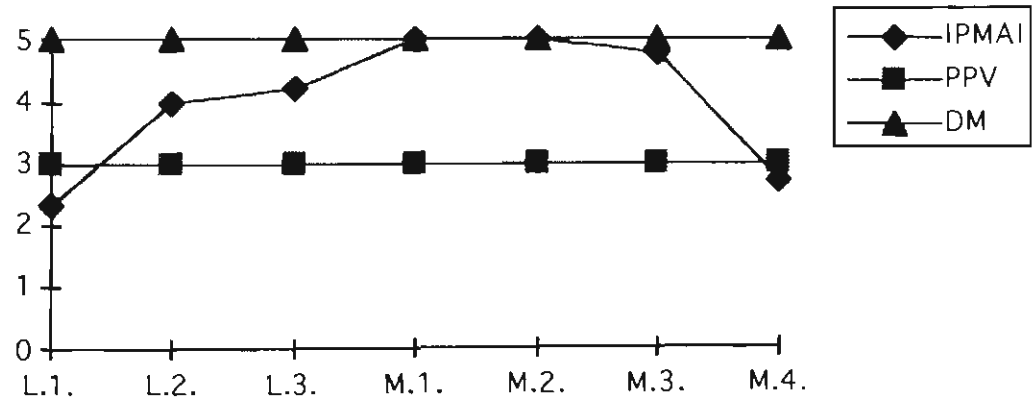

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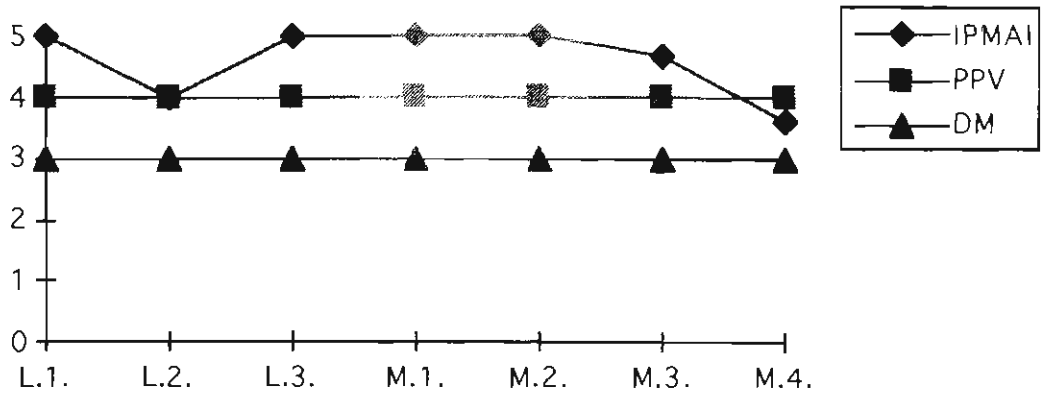

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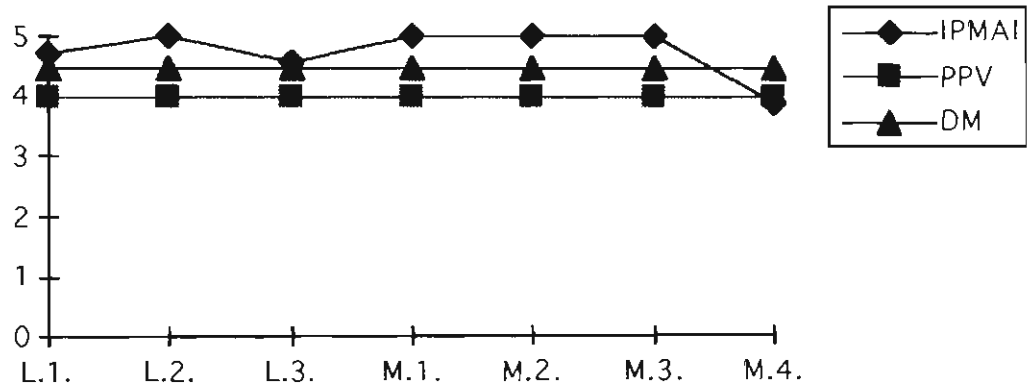

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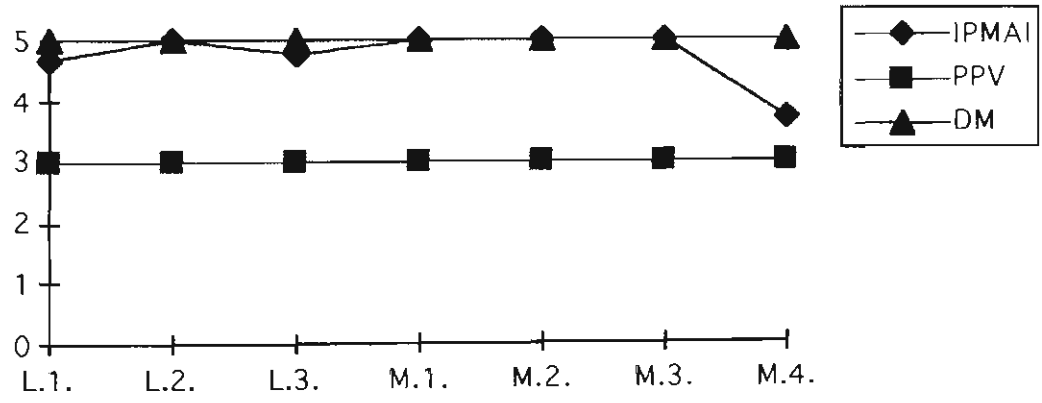

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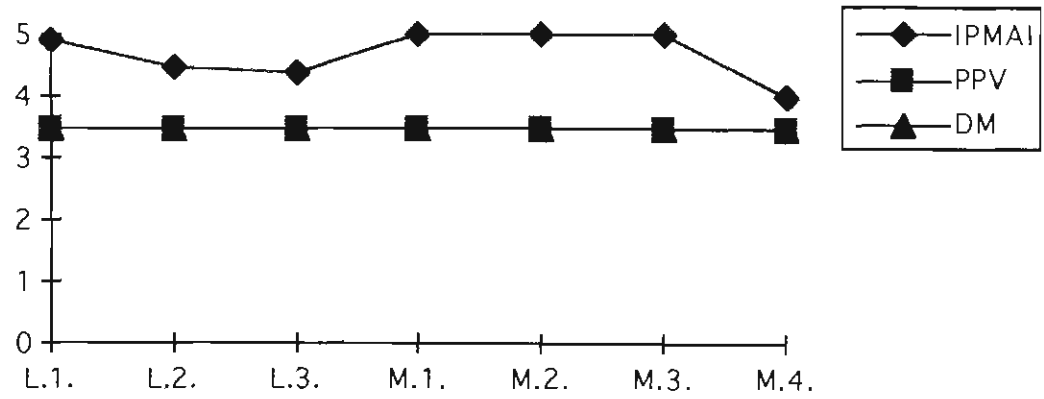
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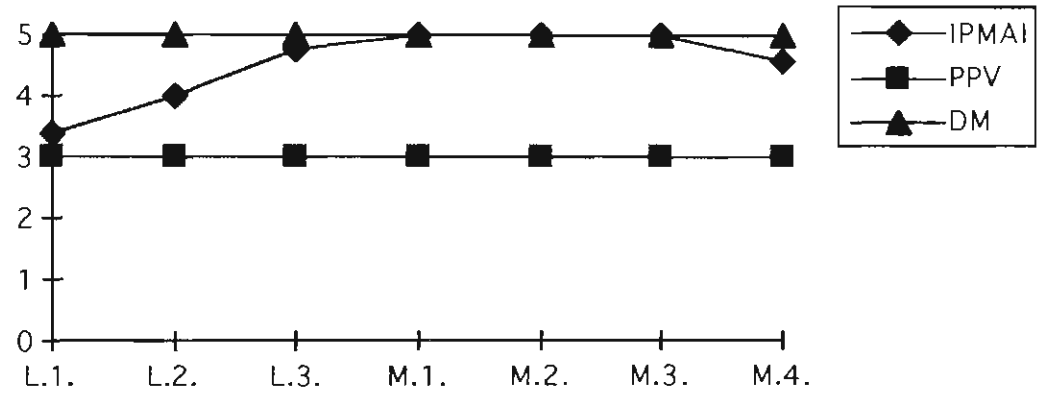
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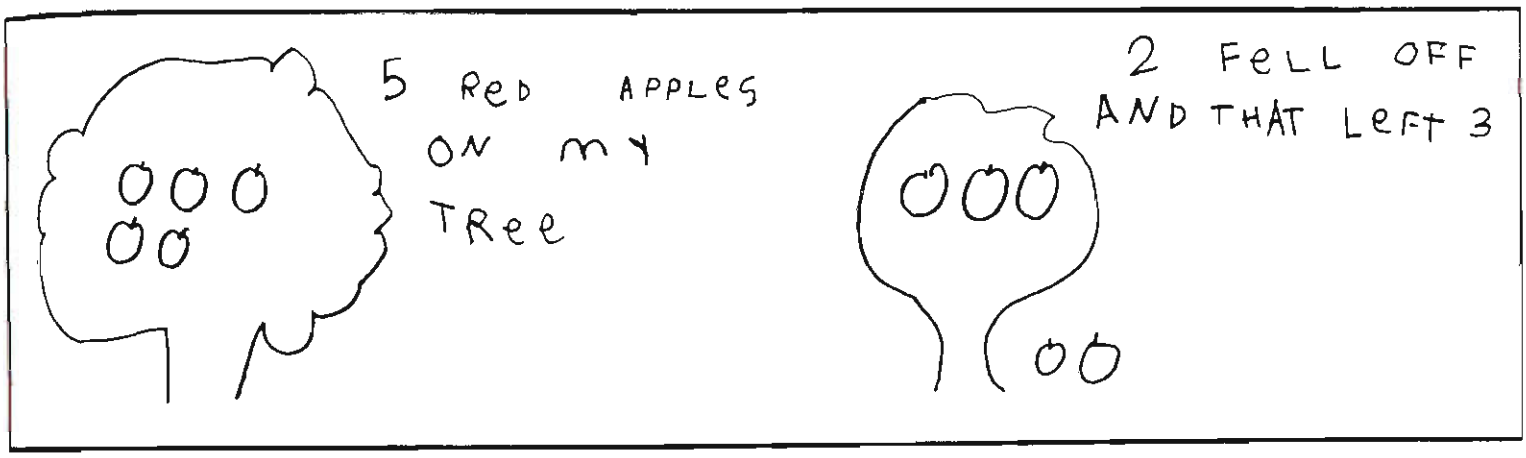
Appendix 14

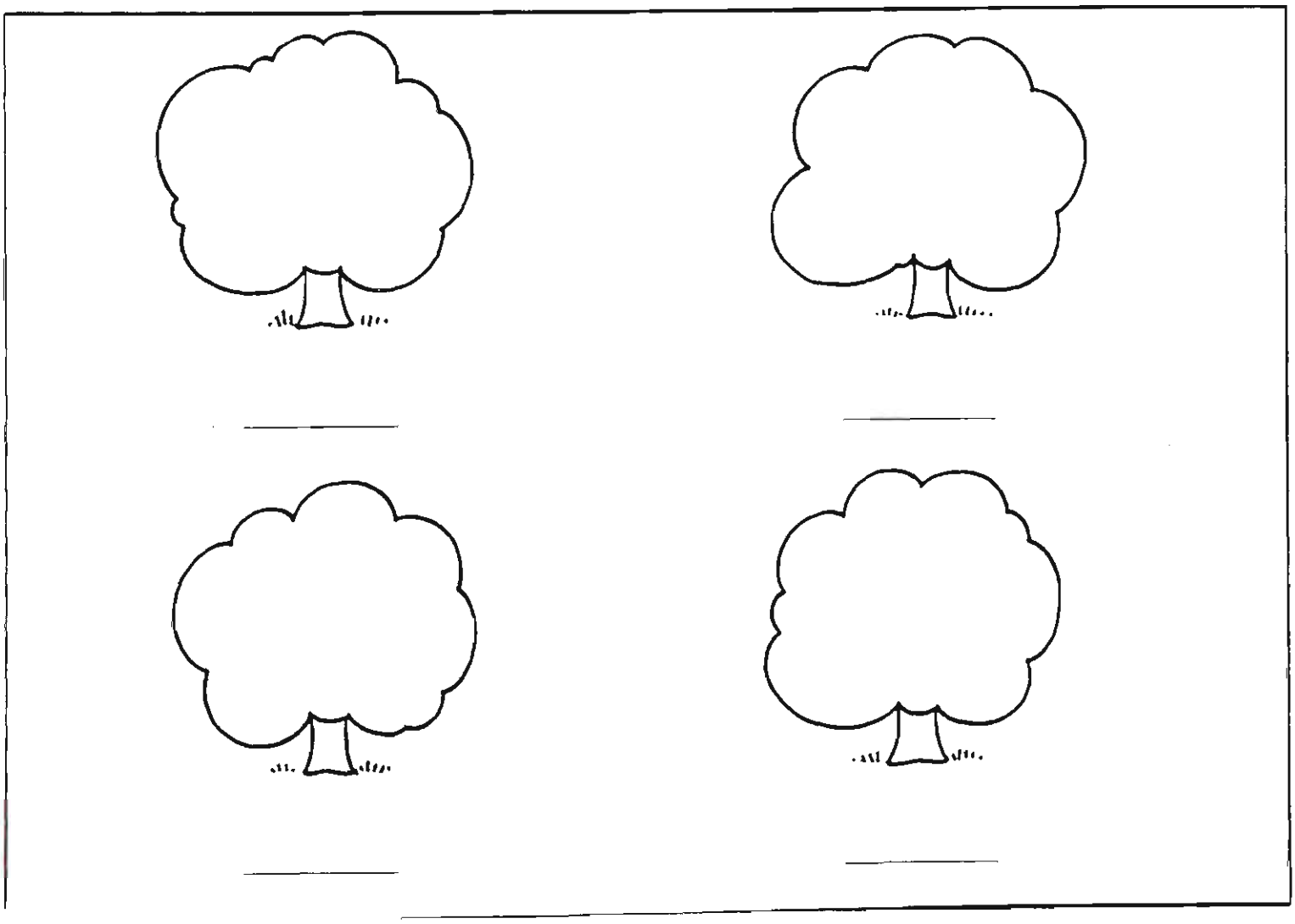
Examples of Kindergarten / Year 1 Extension Work Sheets

DATE: _____

Jessica wrote this number story.



Make up number stories of your own.



Tyrannosaurus Rex means 'tyrant king'. He is the largest meat eating dinosaur. He lived 100 million years ago. His body was 17 metres long. He had small front legs and strong back legs, with long claws. He had a huge mouth with long, sharp teeth about 15cms long. Tyrannosaurus had a very small brain. He fought and killed and then ate smaller plant eating dinosaurs

1. What does Tyrannosaurus Rex mean?

_____

2. When did Tyrannosaurus live?

_____

3. How big was Tyrannosaurus?

_____

4. Describe his mouth and teeth.

_____

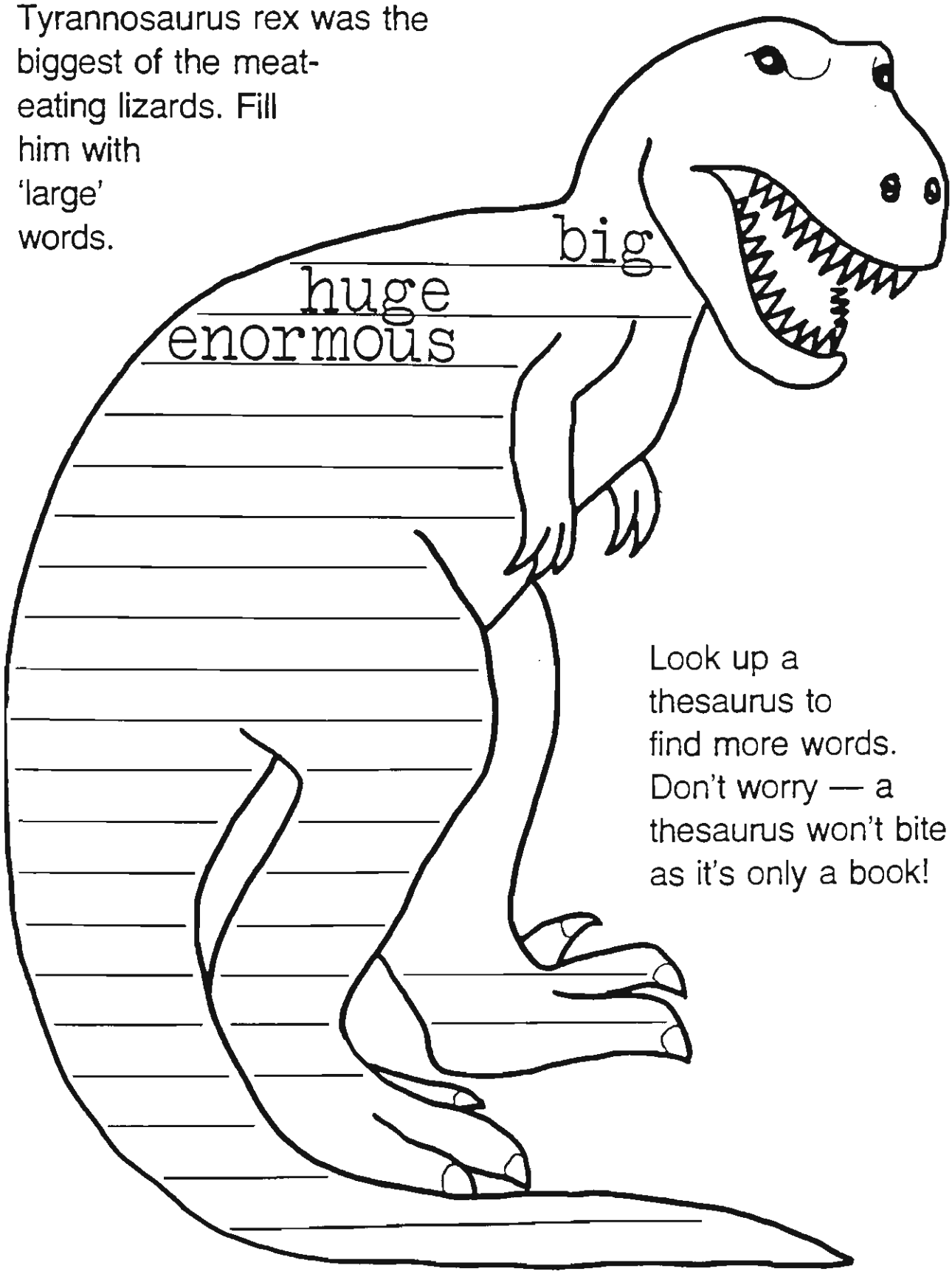
_____

5. What did Tyrannosaurus eat?

_____

TYRANNOSAURUS WORDS

Tyrannosaurus rex was the biggest of the meat-eating lizards. Fill him with 'large' words.



Look up a thesaurus to find more words. Don't worry — a thesaurus won't bite as it's only a book!

Dinosaurs

millions years ago dinosaurs

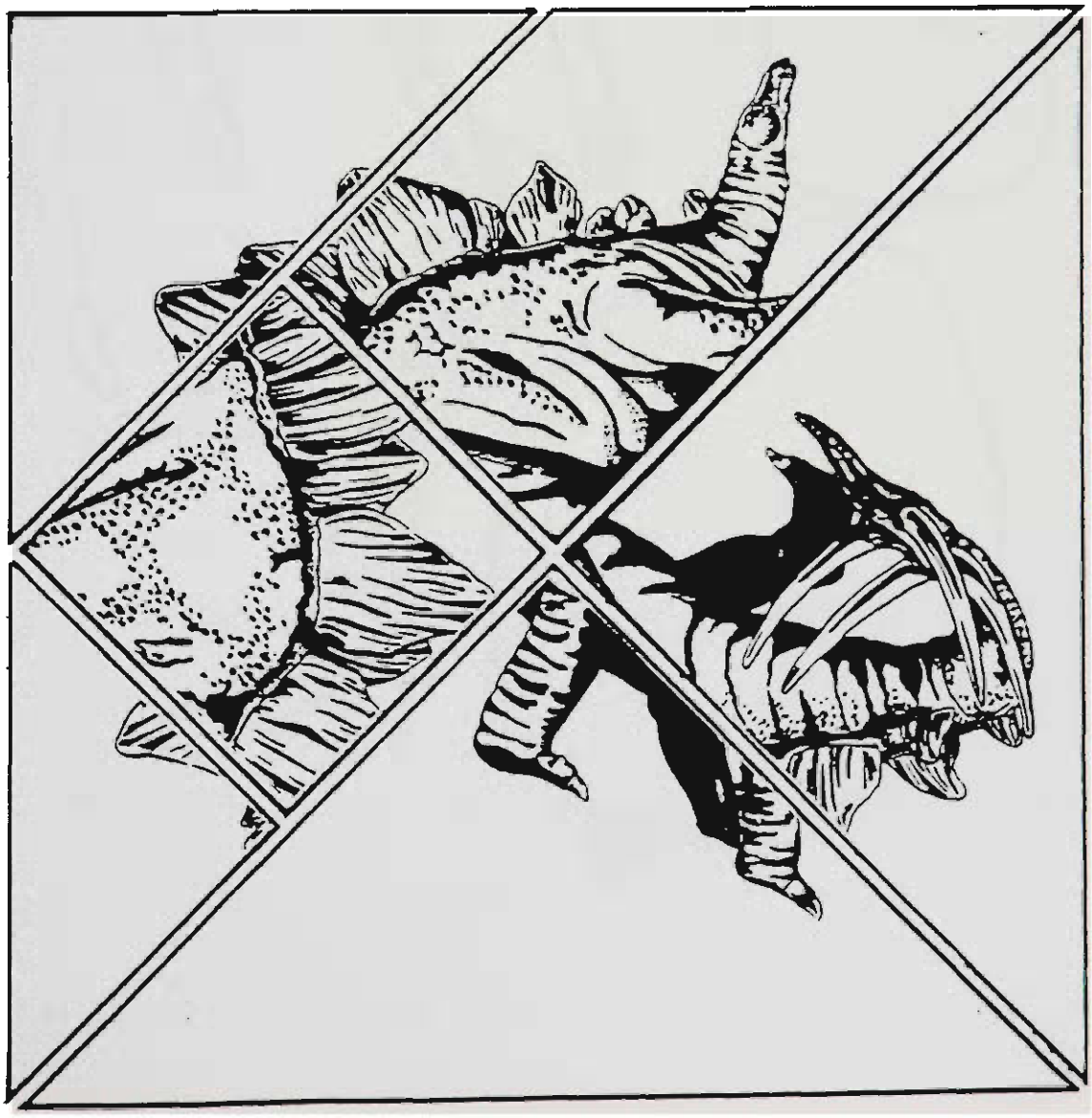
prehistoric animals fossils "terrible lizard"

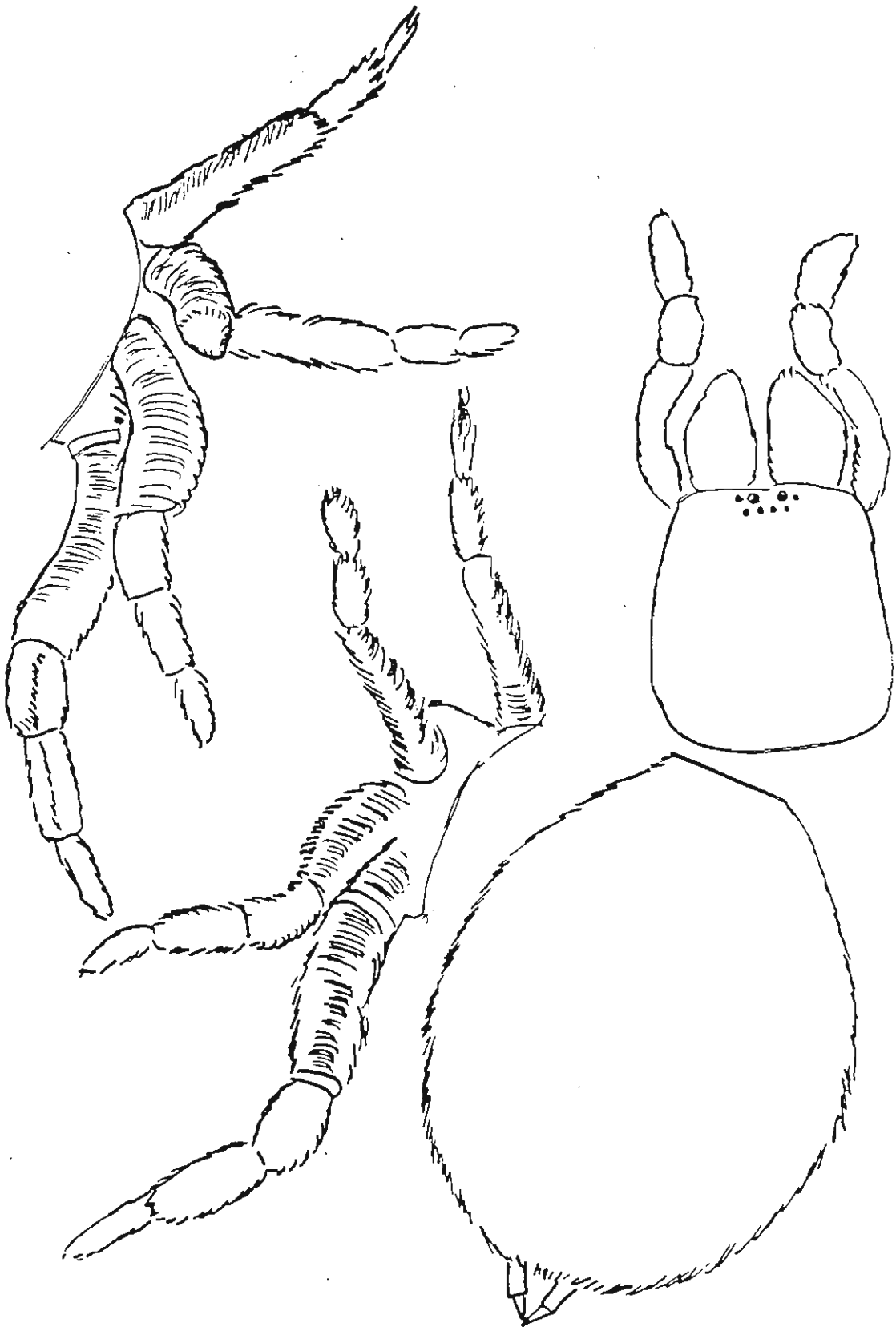
reptiles some most land water air

plants meat eggs world

STEGOSAURUS TANGRAM

Cut out the Stegosaurus pieces and put them together correctly.





Cut and paste in the correct order.

I know an old lady who swallowed a fly.

She swallowed a dog to catch the cat.

She swallowed a goat to catch the dog.

She swallowed a cow to catch the goat.

She swallowed a bird to catch the spider.

She swallowed a cat to catch the bird.

I guess she'll die!

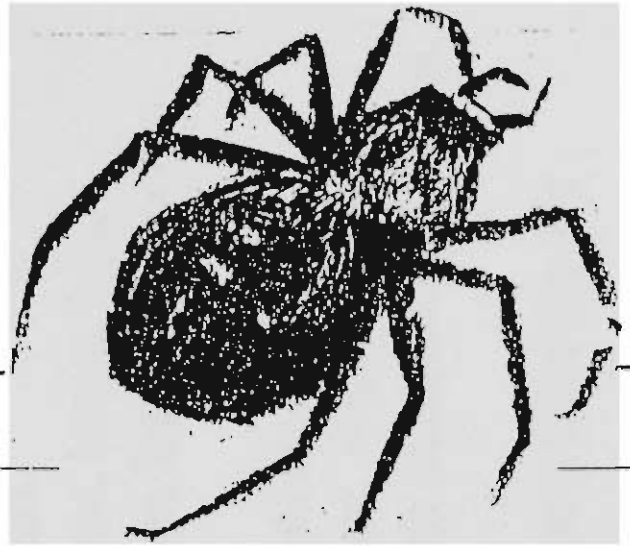
She swallowed a spider to catch the fly.

She swallowed a horse.

She's dead, OF COURSE!

Spiders

Name:
Date:



What they look like

Where they live

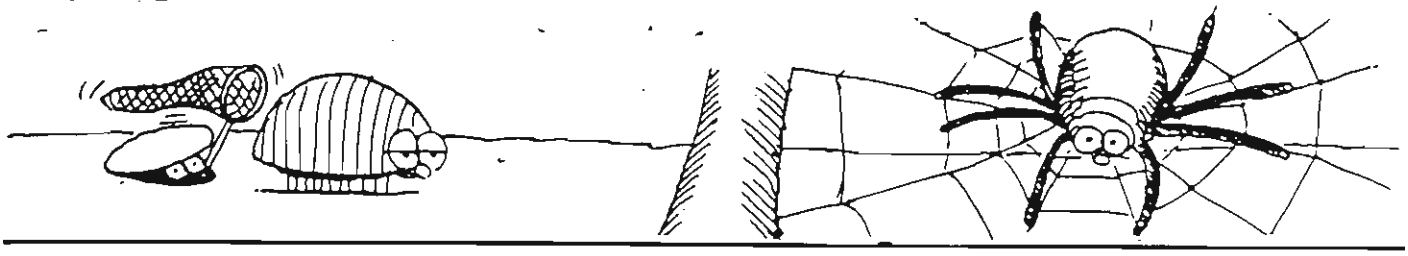
What they eat

What they do

28 Spiders

NAME

Most spiders make webs to catch their food. They eat flies, beetles and other insects which become tangled in the web and can't get away. The trap-door spider digs a hole. On top of its hole it has a door that opens. During the day the spider opens the door a bit and peeps out. If an insect passes by, it jumps out and catches it. It then takes it into its hole to eat.



1. Circle the best ending from the brackets.

a. Spiders eat (insects, grass, cakes).

b. A trap-door spider lives in a (tree, house, hole).

c. The trap-door spider has a (stone, leaf, door) at the top of its hole.

d. The trap-door spider peeps out of its hole (during the night, during the day, when it sleeps).

e. Spiders make webs to catch their (doors, holes, food).

2. Write words from the story that are opposite to:

a. night_____ c. in _____

b. bottom_____ d. shuts _____

3. Write words from the story that mean:

a. What a spider uses to catch insects.

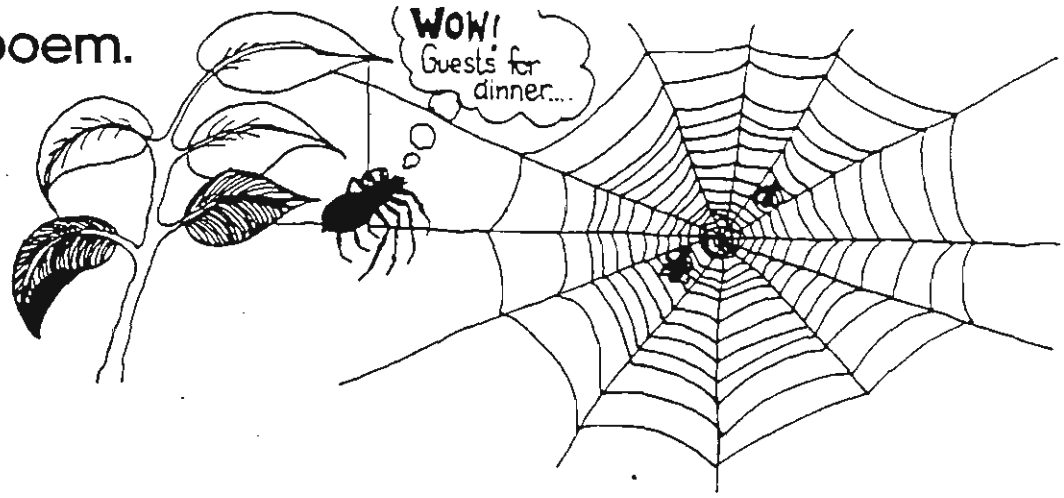
_____

b. Leap in the air. _____

c. Mixed up in something. _____

4. Imagine you are a spider. On the back write a story about how you catch flies.

Write an acrostic poem.



S _____

P _____

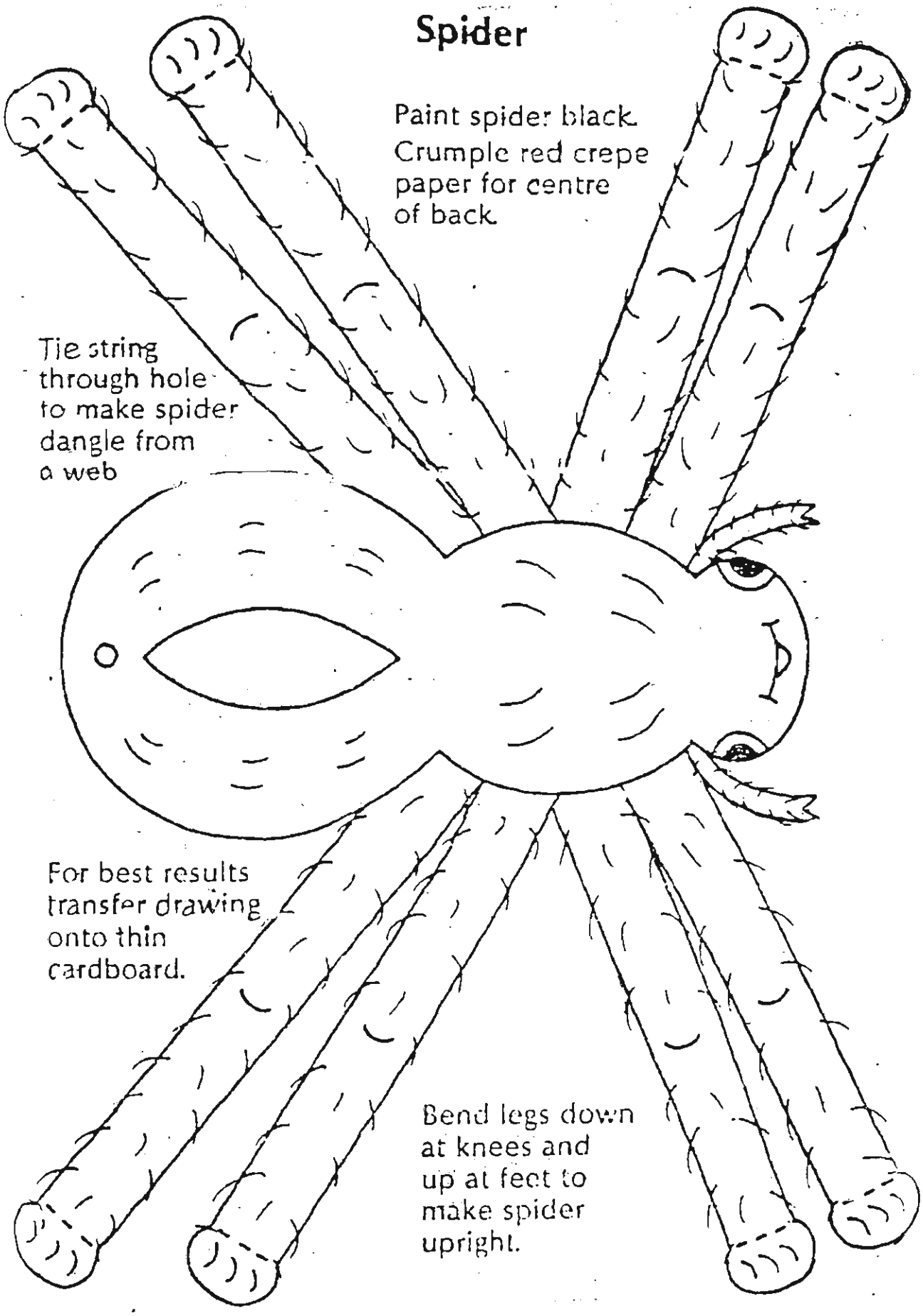
I _____

D _____

E _____

R _____

Spider


Paint spider black.
Crumple red crepe paper for centre of back.
Tie string through hole to make spider dangle from a web
For best results transfer drawing onto thin cardboard.
Bend legs down at knees and up at feet to make spider upright.

Appendix 15

THE IPMAI

There is an abundance of concrete evidence that children from minority groups are not equally represented - and in many instances are not represented at all - in special programs for gifted and talented students as their "Anglo middle-class" counterparts in the upper primary and secondary years of school. As an endeavour to overcome this educational inequity I believe that it is necessary to determine the academic potential of these children as early as possible - preferably in the late Pre-School or Kindergarten years. This will then afford teachers the opportunity not only to identify individual strengths, but also perceive areas of "need" and develop classroom programs and strategies that will meet these needs, and continually foster strengths as they emerge and develop.

The **IPMAI** instrument was designed and modified over a period of five years to assist this specific identification process. It consists of a series of subtests that will determine the extent of language and mathematical competencies of young children who enter school with a restricted form of English. From the results of one-to-one 'testing' procedure and extensive observations the tester/teacher/educator will be better equipped to make informed educational decisions that will enable the child to receive instruction at his/her own individual need and performance level.

The three subtests in the Linguistic Intelligence domain are designed predominantly to allow the tester to judge the quality of English that the child can manipulate and not the quantity - what the child **can do** with the English language he/she possesses. Reading ability, comprehension, vocabulary knowledge and usage, sentence structure, sequence of ideas and 'creativity' were all included in the matrix to provide a comprehensive profile of each child. By incorporating these skills into the three different types of subtests, it was anticipated that a much broader and fairer view of each child would be obtained while at the same time permitting preferred learning styles to emerge.

The subtests included to determine the extent of Logical-Mathematical Intelligence were based on the three strands of mathematics - Space, Measurement and Number, incorporating the additional 'difficulties' of **memory** and **following oral directions.**

Wherever possible, in both the Linguistic and Logical-Mathematical subtests, the activities were designed as '**hands-on**' items, using only familiar objects and situations from every-day life.

Because the original aim of the **IPMAI** was to establish an individual pupil profile that could identify potential academic giftedness, the level of difficulty of most of the subtests was reasonably high, provided the test was administered as suggested - no later than early Kindergarten for children from language deprived minority groups.

In its original form (pilot tested with groups of NESB, Aboriginal and low SES children from five Government and Independent schools in the Illawarra in 1992) the **IPMAI** consisted of: **LINGUISTIC INTELLIGENCE SUBTESTS - L1 and L3**

LOGICAL-MATHEMATICAL INTELLIGENCE SUBTESTS - M1, M2 and M4.

However from analysis of results, within the Linguistic domain, imaginative/creative use of English was very limited, mainly consisting of progressive facts. **L2** was subsequently added in 1993. **M3** was also added to the Logical-Mathematical domain tests to provide a memory component. This revised version was then trialled by the same Illawarra schools, as well as a school in the Scottsdale District of Phoenix, Arizona and in Uzhgorod, Ukraine (translated for use by Professor Natalia Gajdamaschko, Psychology and School Counsellor, University of Uzhgorod) during 1993/4.

From the positive feed-back from all sites the **IPMAI** was used in this form for the purposes of this research study.

The **Year 1 Mathematics - M4 component** was also added for this research, so that results from Kindergarten and Year 1 could be compared. For the Year 1 sample teachers were asked to select children who they considered displayed characteristics for potential academic giftedness. This selection process was to be made using the Baldwin Identification Matrix - Revised Edition (1984) - Appendix 2, as well as classroom teacher/researcher observations, portfolio assessment (where available) and from analysis of parent nomination inventories. Analysis of responses were then used by the researcher to assist gauge reliability of test items: from the random sampling of Kindergarten children were the same, or similar, indicators of academic giftedness emerging as those demonstrated by the Year 1 children who had already been considered potentially academically gifted?

IPMAI Test Items

L.1: PROBLEM SOLVING ACTIVITY:

The child is given the Dacta Kit - 'Zoo' to explore (five minutes free play). He / She is then presented with a card and asked to read the short story on it:

Crocodiles like to spend most of their time in shallow water. This makes it very hard for visitors to see them.

See if you can make a special bridge that crosses over the crocodiles' pool and girls and boys and parents can visit this pool to have a better look at the crocodiles but they will be safe.

If the child is unable to read the 'story', he / she is asked to identify 'words they know'. The card is then read by the tester while the child follows.

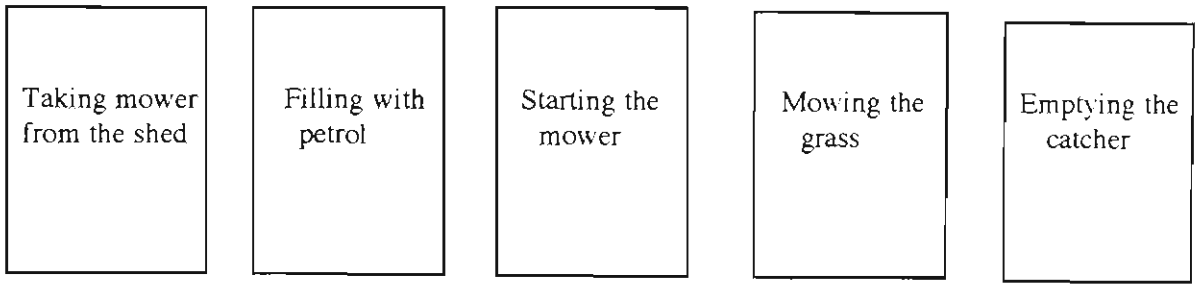
To ensure comprehension of the problem, the tester asks: "What do you have to do?" If the problem is understood, the child is encouraged to 'build his / her bridge'. If the problem is not understood, for example, concept such as 'bridge' is not known, extra explanation is given until the child fully understands the problem requirements. The child is then encouraged to 'build his / her bridge'. No time limit. When the child is happy with his / her construction, the tester asks: "Would you like to tell me a story about your model?"

To ensure that nothing is overlooked in later analysis it is suggested that the session is audio-taped and photographed. These photographs can later be displayed as a class mural, if desired, or given to each child to write about, in his / her own 'Writing Journal'.

The test is scored according to Matrix: L.1 (see Appendix 5).

L.2. PICTURE ARRANGEMENT:

The child is shown five photograph-sized, coloured pictures depicting five stages of an activity, in this case 'mowing the lawn'. The pictures are spread out on the table in random order, so the child can see them clearly, and is given time to look at them. He / She is then asked, "Do you know what is happening here?" and then "Can you put the pictures in the right order for me?" If hesitant, "What do you think happened first? - then? - next?"

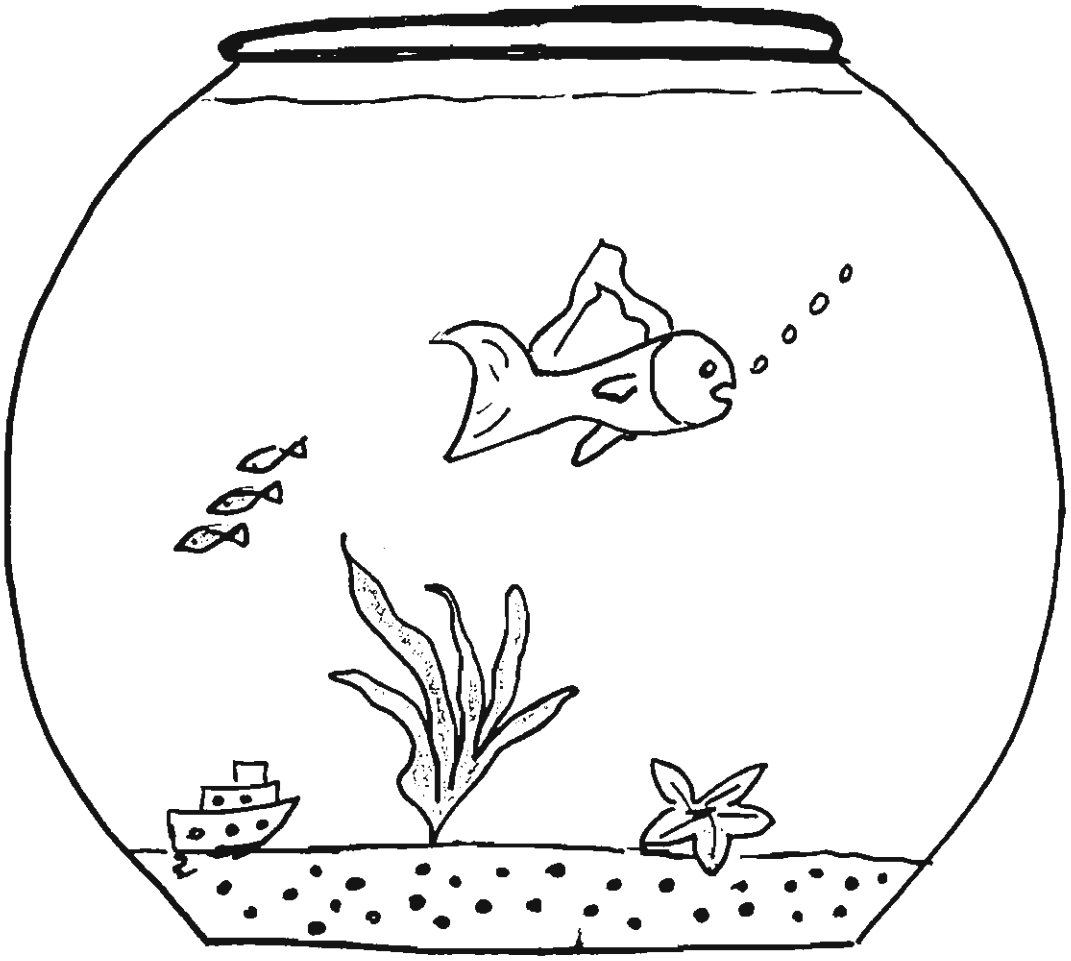


When the sequence is completed, the child is then asked to make up a story about the pictures, and encouraged to elaborate on their story, for example, "What might the girl's name be? What do you think happened next? Why did she decide to do this work?"

Audio-taping is again suggested, so the language structure, vocabulary and usage can be better analysed later. This test is scored according to Matrix L.2 (see Appendix 5).

L.3. PICTURE DIRECTION

The child is given a coloured drawing (in this case fish swimming in a bowl), and is told that the tester wants to draw a picture exactly the same as his / her picture. "You have to tell me exactly what to draw, where and how, but you must not let me see your picture. When I finish my drawing, it must look exactly like your picture." The child sits opposite - facing the tester - and watches what is drawn. He / She gives all the directions for the activity. The tester may help by asking simple questions, for example, "What colour? Are they the same size? Here?" if the child is struggling.



Audio-tape this segment, so vocabulary can be analysed, and the results used for 'word groups' and 'theme words' charts to assist in creating class / group spelling and writing dictionaries. This test is scored according to Matrix L.3 (see Appendix 5).

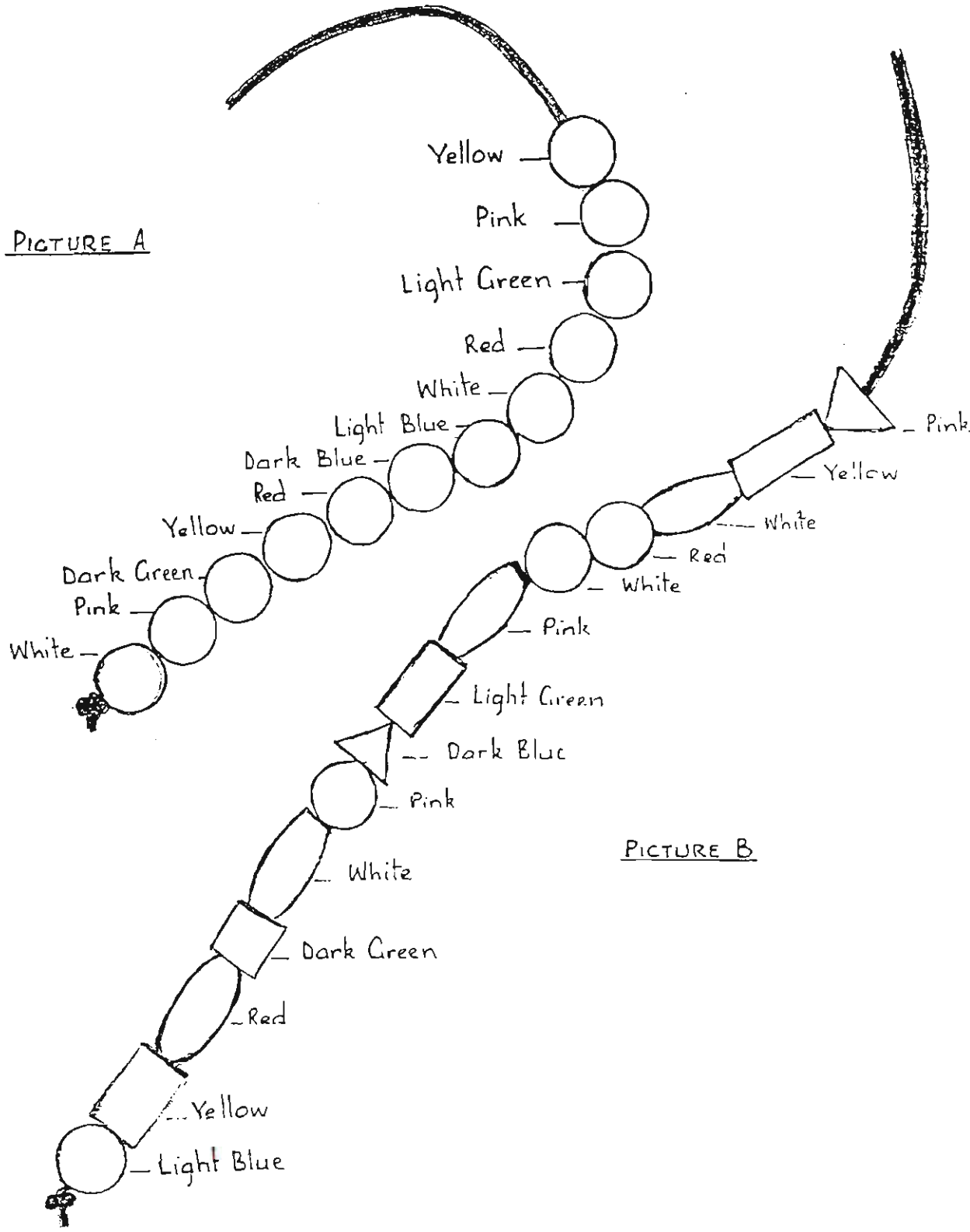
M.1. BEAD THREADING

Here the child is given a tub of beads, of all colours and shapes. Allow him / her time to have a look at them to see what is available.

1. He / She is then given a string of pre-threaded round beads of mixed colours (see picture A), and asked to make another string exactly the same.

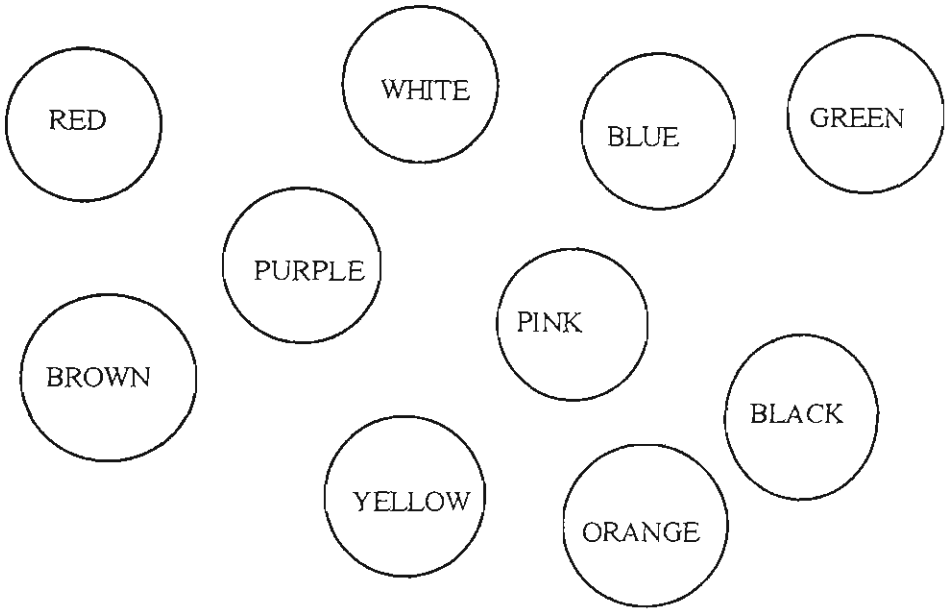
2. The second pre-threaded string of beads is given to the child to examine. It is of mixed colours and shapes (see picture B). The tester asks the child, "Can you see that this string is different from the other one? How is it different?" (If child does not see the difference the tester may respond by holding up Strings A and B and saying, "They are all different colours, but this one has all round beads, and this one has different shapes.") "Now I want you to make one exactly the same as mine."

Tester in this activity should take note of fine motor skills, shape and colour discernment. It is scored according to Matrix M.1 (see Appendix 5).



M.2. MOVING COUNTERS

Ten different coloured counters are placed randomly on the table in a group.



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The child is asked to place the counters in a straight line with the black one first and the red one last (any colours can be nominated). When this one is completed the tester says, "Could you change it so the 'X' counter is in 4th place please?" (Choose any counter - not first or last - which is not in fourth place). Now ask for another change - "Would you put the 'Y' counter next to the 'X' counter." (Again, do not choose first or last, second or third, which would put the 'X' counter out of place). The tester may have to repeat the requirements - straight line; black first; red last; 'X' fourth; 'Y' next to 'X' - like a checklist so the child can see if his / her arrangement meets all of the rules.

The test is scored according to Matrix M.2 (see Appendix 5).

M.3. NUMBER RECALL

In this activity the tester is endeavouring to discover the child's memory capabilities. Explain to the child that he / she is to repeat the numbers that you say. Have a trial-run to ensure that the child knows what is required. Avoid any obvious sequences like 2, 4, 6, or 3, 6, 9 and any zeros. The first section is with two numbers (child repeats), then three numbers (child repeats) and finally four numbers (child repeats). The second section requires the child to repeat the numbers in reverse order — again two, three, then four numbers for the child to retell in reverse order, after the tester. The tester should have at least one practice of the reverse order item to make sure the child knows what is to be done. The explanatory vocabulary is left to the discretion of the tester.

Test as given: A. i) 4, 7; ii) 3, 8, 5; iii) 9, 2, 6, 1.

B. i) 8, 2; ii) 5, 9, 4; iii) 7, 1, 4, 6.

This is scored according to the Matrix M.3 (see Appendix 5).

M.4. MATHEMATICAL CONCEPTS

A. Kindergarten:

1) Copy numerals 1 - 10.

2) Matching sets (pictorial form).

3) Counting and numeral recognition (for example, six flowers are drawn in a group; the numerals 5, 6, 7, and 8 are beside the picture. The child has to indicate the correct number of flowers).

4) Writing numerals, 1 to 10, from dictation and/or reading in random order.

5) Counting and write the answer (as for question 3, but no numerals are given).

6) Making sets (child is asked to make a set of eight balls in a given circle).

7) Given 1, 2, 3, ... the child is asked to complete the sequence to 10.

B. Year 1:

1) Time - a) draw hands on a clock face for o'clock and half past.

b) from a set of clock faces, the child marks the dictated time.

2) Recognition of 1/2 a) as a diagram

b) of a set

c) match diagram to correct number form.

d) mark half of a given set.

3) Money - a) show a given amount by marking pictured coins.

b) calculate change and mark the appropriate pictured coins.

4) Verbal Problems - simple calculations involving all processes (division expressed as 'half', and multiplication expressed as 'twice as many').

5) Computations + and -.

6) Process signs + and -.

7) Computations x including 1/2 x __.

This is scored according to the Matrix M.4 (see Appendix 5).