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THE UNIVERSITY OF ALBERTA

DIFFERENTIATING THE CURRICULUM FOR THE GIFTED AND TALENTED DEAF CHILD

BY
PATRICIA ANNE MACDONALD

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
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The undersigned certify they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled DIFFERENTIATING THE CURRICULUM FOR THE GIFTED AND TALENTED DEAF CHILD submitted by PATRICIA ANNE MACDONALD in partial fulfillment of the requirements for the degree of MASTER OF EDUCATION in EDUCATIONAL PSYCHOLOGY (DEAF EDUCATION).

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Abstract

The purpose of this thesis was to examine Kaplan's Differentiated Curriculum for the gifted and talented and to ascertain its value when applied to a deaf population.

A review of recent literature dealt with historical perspectives, definitions, characteristics, problems, curriculum, and recent developments in the areas of giftedness, curriculum development for the gifted and talented, and deafness. The research revealed that while the education of gifted and talented has enjoyed a long and proud heritage, the areas of curriculum development for the gifted and talented and deaf education remain in the early stages of growth. Curriculum planning for the gifted and talented deaf learner is almost non-existent.

The basic principles, foundations, classroom utilization and evaluation procedures of Kaplan's Differentiated Curriculum model and Whole Language were outlined. A brief background on the Manitoba Department of Education Curricula was given. A comprehensive thematic unit plan was developed using the fundamental tenets of these approaches. The unit plan, entitled "Patterns" is a six week outline including synthesization of Whole Language and the Differentiated Curriculum. Also included are chosen provincial curricular goals and objectives, a unit flowchart, a partial bibliography, possible lesson plans, activities and projects and suggested evaluation strategies.

Educational considerations in deaf education were presented, including an outline of accepted teaching methods. Possible strengths, weaknesses and recommendations for implementation of the synthesized unit plan were offered. The value and respect of the individual, both teacher and student, were the most important strengths while conflicting teaching styles and time- and labor-intensity were possible weaknesses. Visual/hands-on teaching presentation was an important recommendation for adapting the unit plan for the gifted and talented deaf learner.

In the concluding chapter the positive value of implementing the Differentiated Curriculum model with a deaf population was outlined. By differentiating the curriculum teachers of the deaf provide programs that differ to the degree and dimension necessary to meet the needs of the gifted and talented deaf learner. The implications and limitations sections contain suggestions for further study in the area of educating deaf gifted and talented children. Subsequent investigation of characteristics indigenous to the gifted and talented deaf learner and curricula planning and development for the deaf population were two areas suggested for future research.

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TABLE OF CONTENTS

CHAPTER		PAGE
ONE	INTRODUCTION	1
	Background	1
	Purpose	3
	Rationale	4
	Summary	6
	Definitions	7
TWO	REVIEW OF THE LITERATURE	9
	Gifted and Talented	9
	An Historical Perspective	9
	Definition	13
	Characteristics and Traits	17
	Problems	20
	Summary	21
	Curriculum for Gifted and Talented Students	22
	An Historical Perspective	22
	Models	24
	Planning and Development	26
	Implementation	28
	Summary	29
	Deafness	31
	An Historical Perspective	31
	Definition	34
	Etiology	35
	Categories of Hearing Loss	37
	Assessment of Hearing Loss	40
	Types of Hearing Loss	41
	Education of Deaf Children	42
	Overview	42
	Systems of Instruction	44
	Deaf Education Methods, Theories and Techniques	47

Psycholinquistic Development..... 50
Academic Achievement..... 51
Education of the Deaf Gifted and Talented Child.. 54
Overview..... 54
Identifying Giftedness and Talent..... 55
Gifted Characteristics..... 56
Educating Gifted and Talented
Deaf Students..... 57
Summary..... 58
Chapter Summary..... 59

THREE THEME DEVELOPMENT THROUGH CURRICULUM
DIFFERENTIATION AND WHOLE LANGUAGE..... 62
Differentiated Curriculum..... 63
Background..... 63
Foundations..... 64
Principles..... 66
The Classroom..... 69
Evaluation..... 71
Summary..... 71
Whole Language..... 72
Background..... 72
Foundations..... 73
Principles..... 76
The Classroom..... 78
Timetabling..... 79
Evaluation..... 82
Summary..... 83
Differentiated Curriculum and Whole Language.... 84
Areas of Commonality..... 84
Manitoba Department of Education
Curriculula for Grade Three..... 89
Synthesis..... 90
Theme Preparation..... 91
Choosing the Theme Goals and Objectives..... 93
Differentiating the Manitoba Curricula..... 95

Week by Week Outline..... 98
Possible Centers, Projects, Activities and Lessson Plans..... 100
Evaluation..... 107
Summary..... 109
Chapter Summary..... 111

FOUR INTEGRATION, SUMMATION AND RECOMMENDATIONS..... 114
Project Overview..... 114
Advantages of Synthesizing Whole Language and Differentiated Curriculum..... 116
Disadvantages of Synthesizing Whole Language and Differentiated Curriculum..... 120
Adaptation Suggestions for Synthesizing Whole Language and Differentiated Curriculum..... 122
Concluding Remarks..... 124
Limitations..... 128
Implications..... 129
Suggestions for Further Research..... 131
Chapter Summary..... 132

REFERENCES..... 135
APPENDIX A..... 152
APPENDIX B..... 156
APPENDIX C..... 159
APPENDIX D..... 179
APPENDIX E..... 190

LIST OF TABLES

TABLE		
2.1	Categories of Gifted Characteristics	18
2.2	Traits of the Gifted and Talented	19
2.3	Curriculum and Instructional Models	25
2.4	Trefflinger's Individualized Programming Planning Model	27
2.5	Effects of Level of Hearing Loss	38
2.6	Types of Hearing Loss	41
3.1	Manitoba Curricula Goals and Objectives	94
3.2	Synthesis of Curricula Goals and Differentiated Curriculum	97
3.3	Weeks 1 and 2 - Pattern Identification	99
3.4	Possible Centers, Projects and Activities	101
3.5	Possible Lesson Plans	103
3.6	Evaluation Techniques	107

CHAPTER ONE
INTRODUCTION

Background

The planning of special programs for the gifted and talented has been documented as far back as early Grecian times when Plato devised a curriculum to identify and educate 'exceptional' children. Although the popularity of special curricula has waned and waxed over the centuries, educators have consistently found merit in setting up programs to meet the needs of the gifted and talented. The education of the deaf has not enjoyed such a proud history. In early centuries 'deafness' and 'mental retardation' were often synonymous terms. While Plato was engaged in the task of educating the gifted and talented, his Grecian brothers were destroying deaf children because they were 'imperfect'. From that time forward, society alternately benignly neglected or actively deprived the deaf of their civil and religious rights. It was not until the early 1500's that educators began to argue for the importance of teaching the deaf to read and write. However, much of the arguing was for argument sake alone and it was only in the 1800's that consistent basic educational programs were put in place for the deaf. Bearing these facts in mind, it is not surprising that the two terms, 'gifted and talented' and 'deaf', have been seen as mutually exclusive until recent years.

Despite the fact that the gifted and talented have been recognized and admired throughout history, the formal development of curricula and specialized programs did not begin in earnest until the later part of this century in North America. This area is still very much in its infancy. In the beginning, programs consisted mostly of 'enrichment' and 'acceleration' projects provided at the discretion of the classroom teacher. As the general public and school personnel began to recognize the importance of providing programming for gifted and talented students, policies and support staff were put into place. However, the majority of provinces and states still do not have formal curricula (Lewis, 1989). The 'enrichment' and 'acceleration' projects have been developed into more formal programs, based on models and theories of such pioneers in the field of gifted and talented studies as Renzulli, Bloom, Maker, Torrance, Terman and Treffinger. However, these programs have not always been based on curricula laid down specifically to meet the needs of these gifted and talented students (Lewis, 1989). In addition, human and financial resources play a large factor in program planning. School boards have not consistently recognized the need for special funding and personnel in gifted and talented education. There remains a significant need for work in this area.

Where does the deaf student fit into this scheme? Relegated mostly to a system of institutional or residential schools, tossed between the tempests of 'the best method to reach and teach the deaf child', and deprived of a wide range of services and options,

gifted and talented deaf students have had little chance of reaching their potential through the school system (Moores, 1982). At this time a curriculum written specifically for the gifted and talented deaf student does not exist in Canada . In the U.S.A. a limited number of curricula do exist, most notably from the Texas School for the Deaf and Gallaudet University (Washington, D.C.) (Fraser, 1986).

It is evident from the literature that there is a considerable need for work in this area. While much has been written on both the gifted and talented and deafness, to date little research combines the two areas.

Purpose

The purpose of this project was to examine Kaplan's Differentiated Curriculum and ascertain its value at the elementary level for deaf gifted and talented learners. It was synthesized with the Whole Language Approach and the goals and objectives for the Grade Three Manitoba Curricula.

Kaplan's model for differentiated curriculum was chosen because: (1) it displays many similarities to the Whole Language approach this writer currently employs in the classroom, (2) the foundations and principles are similar to the accepted and practised foundations and principles in the education of deaf learners and (3) the model allows for differentiation for all learners, raising the question: Could it be valuable when teaching deaf gifted and talented children?

The Whole Language Approach was employed because (1) the writer is familiar with and practices the approach in her classroom and (2) Canadian teachers of the deaf, especially in the elementary area, report that Whole Language has proven very successful in facilitating the learning process for their students (personal communication with teachers of the deaf, A.C.E.H.I. conference, 1990).

As the writer teaches Grade Three in the Manitoba school system the use of the Manitoba Department of Education curricula for that grade level was utilized.

Rationale

The work of Lewis (1989) supports a previous study by the Canadian Education Association (Borthwick, Dow, Levesque, & Banks, 1980) which found that approximately one-third of responding schools (n=218) were either in the process or planning or executing programs for their gifted and talented students. The percentage of schools planning or implementing programs was only slightly higher (38% compared to 30%) in 1989 than 1980.

School divisions, for the most part, continue to rely mainly on teacher-generated materials in the classroom and policies are often limited to general two- or three-page papers covering a broad spectrum of 'gifted and talented issues' (Lewis, 1989). Few provinces have an all- encompassing document outlining goals and expectations of their gifted and talented programs. The manual issued by the Department of Education in Alberta was presented as a

comprehensive example of programming for gifted and talented students.

Lewis (1989) also reported that of the responding schools none had policies or programs in place for educating the deaf gifted and talented learner. Personal communication (teachers of the deaf, A.C.E.H.I. conference, 1991) with teachers at residential schools for the deaf across Canada indicate that programming for the deaf gifted and talented students is generally within the realm of the classroom teacher who relies on his/her own planning and/or ready-made materials to meet the needs of students. Teachers indicated that, at this time, very little work is being done with deaf gifted and talented learners in their schools.

School administrators, teachers, parents and deaf gifted and talented learners need policies and programs which (1) acknowledge the special skills and abilities of deaf gifted and talented students, (2) recognize those characteristics and traits which are common to all gifted and talented students and those which are unique to the deaf gifted and talented child, and (3) strive to meet the students' educational needs.

With these needs in mind the rationale for this present project was three-fold: (1) to extend existing gifted and talented curricula beyond current form to facilitate use within a gifted and talented deaf population; (2) to reinforce the concept that the terms 'gifted and talented' and 'deafness' are not mutually exclusive phenomena (Maker, 1977: Pledgie, 1982) and (3) to broaden a sparse knowledge

base and extend the understanding of the nature of gifted and talented deaf children.

Summary

Current literature suggests that there is a need for policy and curriculum planning for gifted and talented children, both hearing and deaf, and that at the present time planning and program implementation is largely the responsibility of the classroom teacher. In addition, the possibility of 'deafness' and 'giftedness and talent' co-existing has only become accepted in recent years.

The purpose of this project is to add information to a sparse knowledge base by examining Kaplan's Differentiated Curriculum model and ascertaining its value with a deaf gifted and talented population.

To achieve this objective a detailed examination of current research and literature pertaining to gifted and talented education, curriculum planning for the gifted and talented, deafness, educational considerations for a deaf population, particularly gifted and talented deaf learners was made (Chapter 2). The principles, foundations and tenets of Kaplan's Differentiatied Curriculum model, the Whole Language Approach and the Manitoba Curricula were examined and a thematic unit plan was adapted to sythesize these three areas (Chapter 3). In conclusion, the value of differentiating curriculum for deaf gifted and talented learners was discussed along with the limitations of this project and suggestions for further research (Chapter 4).

DEFINITIONS

Brief definitions are provided to give the reader a general understanding of commonly used terms in this thesis:

audiogram - a graphic representation of audiometric findings showing hearing levels as a function of frequency.

auditory training - the training of the deaf child to the optimum use of residual hearing.

deafness - refers to the condition of one whose hearing is disabled to an extent (usually 70 dB or greater) that precludes the understanding of speech or sound through the ear alone, with or without the use of a hearing aid.

decibel (dB) - a unit for measuring sound and intensity expressed as the ratio between two sound pressures.

decibel average - or pure-tone average (PTA) is the average of the hearing levels at frequencies 500, 1 000, and 2 000 Hz for each ear.

differentiated curriculum - the practice of modifying curriculum to (1) maximize the potential abilities and (2) capitalize on the characteristics and traits of a gifted and talented learner by attending to the degree and dimension which makes a gifted and talented student different from a non-gifted and talented student.

frequency - the number of complete oscillations (cycles) of a vibrating body per unit of time. In acoustics the unit of measurement is the Hz.

gifted and talented - individuals who by virtue of outstanding abilities are capable of exceptional performance in general intellectual ability, specific academic aptitude, creative or productive thinking, and/or visual and performing arts.

Hertz (Hz) - cycles per second (cps).

high-risk register - a set of criteria designed to help identify neonates whose probability of hearing loss is greater than normal.

Manitoba Department of Education curricula - separate curricula for each of math, language arts, social studies, art, science, health and physical education, set out by the Manitoba Department of Education and designated as the curricula which must be taught in all Manitoba public schools.

Whole Language - a child-centered/experience-based approach to education which utilizes the child's natural language and experiences to extend learning to broader and more general concepts.

CHAPTER TWO
REVIEW OF THE LITERATURE

This chapter will examine current literature and research in the areas of (1) the gifted and talented, (2) curriculum for the gifted and talented, (3) deafness, (4) educational considerations for the deaf learner and (5) education of gifted and talented deaf children. The first three sections will all include an historical perspective, definition, characteristics, problems and recent developments.

Until recent years researchers have discounted the possibility of deafness and giftedness and talent co-existing. Why? The exclusivity of education for the hearing gifted and talented, the infancy of curriculum development for both the gifted and talented and the deaf, the lack of normed testing for the deaf and insufficient value placed on the education of the deaf are all factors. The following sections will shed further light on this question, beginning with the gifted and talented.

Gifted and Talented

An Historical Perspective

The notion that some human beings possess a wide range of outstanding abilities and skills is not new. Society has recognized that some individuals are more successful at some

tasks than are others. Societies, over the ages, have evolved various organizational structures to meet the needs of these individuals. Each society has gained from the efforts of such skilled individuals as Mozart, Einstein, and Aristotle. The interest in these gifted and talented individuals has been prompted by: (1) regard for the dignity of the individual person, (2) curiosity about the unfolding of human development, and (3) concern for the nurture of the unusual or unique (Gowan, 1977).

As far back as early Greece there was interest in gifted children (Coleman, 1985). Plato proposed a plan whereby gifted children would be identified and educated. Those who met the criteria of ability to learn through trial and error, to notice superstition, and to discern deceit were to be educated in science and philosophy (Freehill, 1961).

In eighth century France, the Emperor Charlemagne is reported to have been interested in finding talent among the common people (Hildreth, 1966). In the fifteenth and sixteenth centuries, during the spread of the Turkish Empire, an effort was made to recruit talented children from all social classes. Scouts were to locate children among the subjugated Christian populations and bring them to a special school in Constantinople. They were to be trained in Islamic science, religion and art and to serve the interests of the Empire (Freehill, 1961; Hildreth, 1966).

The origins of the gifted child movement in North America are rooted in the late nineteenth and early twentieth century

work of Galton, who devoted his research and writing to intelligence and intelligence testing. This was followed by the development of the Binet-Simon intelligence test in France, the push of Hollingworth for the estabishment of gifted programs, and the space race (Davis & Rimm, 1985).

Impressed with Darwin's theory of evolution, Galton (Davis & Rimm, 1985) reasoned that superior intelligence was due to natural selection and heredity. Superior intelligence, he suggested, was related to the keenness of one's sensory equipment: vision, audition, smell, touch, and reaction time. He concluded that superior intelligence was passed from one generation of distinguished, aristocratic individuals to the next but at the same time omitted to observe that the inherited opportunities and privileges made it easier to be distinguished and a member of the aristocracy in the next generation.

In 1908 Binet and Simon developed the first method of measuring human intelligence based on the concept of mental age. Originally hired by the French govenment to devise a test to aid schools in placing mentally retarded children, they discovered that the ability to pay attention, memory, judgment, reasoning, and comprehension would separate children of different intelligence (Sellin & Birch, 1980).

Binet and Simon's test of mental abilities was Americanized by Terman at Stanford University in 1910. There he pursued the revision and extension of the Binet procedures

that culminated in the publication of the Stanford revision and extension of the Binet-Simon Scale. It was standardized on 905 children, 5 to 14 years of age. It required a trained administrator and could be used with only one child at a time, hence the expression, "individual test". It has been long-lived and popular (Terman & Oden, 1959).

During the early twentieth century the trend moved from focusing primarily on the child's cognitive ability towards viewing each learner as an individual The work of Hollingworth focused on each person as a unique mind and soul, worthy and precious, and capable of positive development. Instrumental in the development of curriculum for the gifted in the New York school system, she was quoted as saying:

> It is the business of education to consider all forms of pupilsin reference to how unusual individuals may be trained for their own welfare and that of society at large. (Hollingworth, 1931, as citied in Passow, 1987)

In 1957 the Russians launched the satellite Sputnik. The ever-competitive American public interpreted this success as Russian supremacy in the educational system race. Reports criticizing the American educational system became very popular, with many references being directed at the lack of progamming for gifted and talented children (Tannenbaum, 1979). Overall the reports cited the American school system as badly lacking in "intellectual nourishment or inspiration"

(Bestor, 1953, p. 32). With the Russian claims that their students were years ahead of American counterparts in terms of science and math, educators in the United States were quick to start channeling their gifted and talented students into special programs (Davis & Rimm, 1985). New curricula were developed in science and math, acceleration and ability grouping were used and efforts were made to identify gifted and talented minority students (Tannenbaum, 1979).

This vigor to educate the gifted and talented child and the interest in Sputnik were short-lived and it was not until the 1970's that awareness and concern for the gifted and talented were rekindled (Davis & Rimm, 1985). With the rise of the self-actualization movement under the tutelage of Rogers and Maslow the public became more aware of personal and group rights (Maddi, 1976). The present interest in the gifted and talented has its roots deeply bound in both personal and social concerns. Whatever the motivation, the interest is strong, as droves of researchers are developing tests, evaluating programs, and publishing hundreds of articles in journals (Davis & Rimm, 1985).

Definition

The characteristics which are associated with giftedness and talent are functions of time and culture (Sloat, 1990). And we have reached that time in our culture that "parents and educators alike are becoming more and more 'gifted conscious'

" (Davis & Rimm, 1985, p. 142). Unfortunately, despite this raised consciousness, there does not appear in any literature a concise and generally accepted definition of these terms, "gifted" and "talented". They do appear to be used synonymously with: "genius", "intellectually superior", "able", "bright", "clever", "creative" and "endowed" . Some psychologists have attempted to differentiate between "gifted" and "talented" , however, this distinction is only applicable for specific educational situations (Cohen, 1981; Gagne, 1985). In general use the term "gifted and talented" is a "political" decision based on the local society's view of what is a rare and valuable ability. And this is subject to change as the society evolves (Bothmer, 1989).

One's definition of gifted and talented is indeed important. Developing specific definitions is a complicated task as no one theoretically based definition will fit all programs and circumstances. Defining "gifted and talented" must be the primary focus when planning curricula . Once the definition is demarcated the programming must be reviewed with great regularity to ensure that goals and objectives remain consistent with the definition (Davis & Rimm, 1985).

At this time the two most influential definitions of gifted and talented are those of the U. S. A. Office of Education (cited in Alberta Education, 1984) and Renzulli (1978) (cited in Fraser, 1987; Sloat, 1990).

The 1978 U.S.A. Office of Education (Alberta Education, 1984) revised definition states:

> The term gifted and talented children means children,and whenever applicable, youth, who are identified at preschool, elementary, or secondary level as possessing, demonstrated or potential abilities, that give evidence of high performance in areas such as intellectual, creative, specific academic, or leadership ability, or in the performing and visual arts, and who by reason thereof, require services or activities not ordinarily provided by the school. (p. 11)The original 1972 version also included psychomotor skills as a sixth area of giftedness.

For Renzulli (1978):

> 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. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. (pp. 63-64)

Renzulli stresses the global nature of giftedness, while the U.S. A. Office of Education accentuates specific giftedness in one or more area. However, there is a general overlap of definition.

For the purposes of this study, the term "gifted and talented" was selected to include all areas of gifted and talented, and one which is in keeping with other definitions currently accepted and in use at this time. The definition assumed for this study was formulated by the Alberta Department of Education (Alberta Education, 1984) as follows:

> Gifted and talented pupils are those who by virtue of outstanding abilities are capable of exceptional performance. These are children who require differentiated provision and/or programs beyond the regular program to realize their contribution to self and society Children capable of exceptional performance include those with demonstrated achievement and/or potential ability in one or several of the following areas
>
> a) general intellectual ability,
>
> b) specific academic aptitude,
>
> c) creative or productive thinking,
>
> d) visual and performing arts.

Bothmer (1989, p.36) states that this definition most closely fits into the "state of mind of the culture at this peculiar fraction of earth's space and time history". There still remains a lack of research in the attempt to demystify the current definitions by providing a focus on the central concern of various populations of learners such as underachievers (Gallagher, 1985; Sloat, 1990).

Characteristics and Traits

Researchers exploring the realm of gifted and talented students generally acknowledge the multidimensional nature of the talents and gifts (Rice, 1985). Gifted and talented children comprise a population that has an extremely wide range of skills and talents. This range can include the abilities of the nongifted and extend to the very highest level of knowledge and skill. These gifts and talents can be found in all areas of human activity (Coleman, 1985). A gifted or talented individual may exhibit some or all of the characteristics, with varying degrees of accomplishment. These characteristics may also be present, to a certain degree, in those individuals not considered gifted and talented.

There remains in the field an inconsistency in the categories defining gifted and talented characteristics. Table 2.1 lists categories that appear most frequently in the literature. The category lists have been compiled by the present author, after a review of existing articles and checklists.

Table 2.1

Categories of Gifted Characteristics

Renzuilli	United States Office of Education (1978)	Davis & Rimm
Task Commitment	General Intellectual Ability	Creative
Creative Ability	Specific Academic Aptitude	Affective
Intellectual	Creative or Productive Thinking	
	Leadership Ability	
	Visual and Performing Arts	

Researchers are also divided on the particular traits a gifted or talented child might possess. Some individuals may exhibit a single trait while others may manifest a set of traits. There do appear to be a number of traits commonly projected by researchers: the traits generally appear early in a child's life; it is more common to see a cluster of gifted and talented traits than a single one; and the intensity of the traits is greater in gifted and talented children than in those children who are not gifted and talented (Clark, 1983; Davis & Rimm, 1985; Maker, 1986). The traits of the gifted and

talented fall into three main categories: the creative, cognitive and affective realms. Table 2.2 lists common traits associated with each of these areas (Taylor, 1989).

Table 2.2.

Traits of the Gifted and Talented

Creative

*Fluent in producing ideas.
*Generates original statistically infrequent ideas.
*Makes associations between remote ideas.
*Visualizes mentally.
*Tolerates ambiguity/uncertainty.
*Senses discontinuities and inconsistencies.
*Makes guesses and hypotheses.
*Elaborates on ideas.
*Rearranges elements of thought.
*Senses elements of thought.
*Takes psychological risks.
*Redefines elements of a task.
*Acts spontaneously.
*Maintains autonomy of ideas.
*Works with concentration.

Cognitive

*Exhibits a longer attention span.
*Learns to read sooner and continues to read at a consistently more advanced level.
*Reaches higher level of attentiveness.
*Performs with ease.
*Enjoys studying difficult subjects for pleasure
*Learns rapidly, easily and with less repetition.
*Has diverse, spontaneous and frequently self-directed interests.
*Asks more questions.
*Adapts learning to various situations
*Commits extra time on assignments of particular interest.

*Knows and understands about things which other children are unaware.
*Recognizes relationships and comprehends meaning.
*Evaluates facts and arguments.
*Adept at judging own abilities, limitations and problems.
*Reasons out problems.
*Quickly analyses mechanical problems, puzzles and tricks.
*Possesses one or more special talents.
*Takes charge of situations.
*Judges the abilities of others.

Affective

*Exhibits emotional stability.
*Is independent.
*Demonstrates a highly developed sense of self-confidence.
*Pursues endeavours with enthusiasim
*Can be depended upon ot complete commitments.
*Shows persistence.

Several researchers (Clark, 1983; Ehrlich, 1982; Taylor, 1989) have included in their list of traits, a physical dimension including : above-average height, weight, and co-ordination; endurance; general good health; high level of energy; and early motor development.

Problems

The characteristics and traits describing a gifted and talented child may give a positive picture of individuals poised on the brink of success. Unfortunately gifted and talented children are not always regarded in that light, nor do they always use their talents in a positive manner. Gifted and talented children may attain a postconventional level of moral

thinking, leading to conflicts with the conventional level thinking of parents or educators (Kohlberg, 1974; Piaget, 1969). A history of successes leads to high self-confidence, independence and internal control. Gifted and talented students often set goals and standards too high, even for their superior skills, thus setting themselves up for paradoxical feelings of ineptness and incompetence (Milgram & Milgram, 1976; Weirner, 1980). Superior humor may, at times, appear offensive (Treffinger, 1981). Educators tend to choose "teacher pleasers" for special programs and may pass over those students in their classes who are gifted and talented but manifest their skills by underachieving or misbehaving. Some of these behaviors include stubbornness, uncooperativeness, egocentrism, lack of courtesy, indifference to conventions, and resistance to teacher domination (Renzulli, 1978; Renzulli, Reis, & Smith, 1981).

Summary

Society, over the centuries, has placed a high value on the achievements of the gifted and talented. However, their education has often been exclusive in nature and has depended largely on the whims of society, politics and the funding made available. Defining the gifted and talented has been and continues to be an on-going process. Currently the definition presented by the U.S.A. Office of Education (1984) and Renzulli (1978) are the two most influential definitions.

Characteristic and trait lists relvolve around these definitions, acknowledging the multidimensional nature of the talents and gifts. However, the gifted and talented students are not without their problems. Inappropriate social skills, low self-esteem and poor classroom behavior may manifest themselves along with, or in place of, the positive characteristics and traits.

Although society has valued the achievements of the gifted and talented, the interest in their education has waxed and waned over the years. The consistent development of curriculum is still relatively new. The following section will examine the background and progress of curriculum being developed for the gifted and talented student.

Curriculum for Gifted and Talented Students

An Historical Perspective

The area of curriculum planning for the gifted and talented is in its infancy. Over the last twenty years solid principles about curriculum planning have been outlined by a number of pioneers. A theory of differential education for the gifted and talented that delineates principles pivotal to the establishment of appropriate curriculum was set down by Ward (1961). Areas of student strength and weakness were pinpointed by Meeker (1969) using the Guilford Structure of

Intellect (SOI). Areas of weakness could then be targeted and curricula built to improve these areas. Memory, cognition, convergent thinking, divergent thinking, and evaluation were addressed using curriculum workbooks. Renzulli (1977) worked on a differentiated curriculum model that incorporated hands-on activities and thinking/research skills into a project-oriented program that stresses real-life problem solving. Kaplan (1985) expanded on Renzulli's differentiated curriculum model by identifying the individual learners' areas of giftedness and talent and mandating educational provisions which develop these characteristics. Content modification in the subject areas of language arts, social studies, math and science was Gallagher's (1975) contribution to the field. Stanley, Keating and Fox (1974) focused on an acceleration model for the gifted and talented. Writings by Feldhusen and Kolloff (1978), Maker (1982) and VanTassel-Baska (1984) have advocated a confluent approach to differentiation of curriculum that includes both acceleration and enrichment strategies.

There are a multitude of approaches that are adopted in classroom programs, many without consideration of their value in terms of solid curriculum principles that reflect content, process, product, behavioral and evaluative considerations (VanTassel-Baska, 1986). The majority of classrooms concentrating on gifted and talented students rely on the teacher-made project or generic programs available

through publishers. This approach appears to be the most prevalent (Hughes, 1991). For the most part, educators choose a current topic of interest to their students, fit in problem-solving, divergent and convergent thinking skills and work these into a project that encompasses specific goals set out for those students. Some of these programs are very effective. The inherent danger is in the possible lack of attention to sound design principles in curriculum and instruction for the gifted and talented.

Models

During the last 20 years, curriculum development in gifted and talented education has been primarily influenced by three main approaches: 1) process-product models (Bloom, 1982; Renzulli,1977); 2) content mastery models (Davis & Rimm, 1985; Fisher, Walters, & LoGiudice, 1987); and 3) the epistemological concept model (Hayes-Jacobs, 1981; Maker, 1982; Tannenbaum, 1983).

Table 2.3 (Adapted from Taylor, 1989) outlines the main principles, the evaluation method implemented, and problems/criticism of these three approaches.

Table 2.3

Curriculum and Instructional Models

Process-Product Model	Content Model	Epistemological Model
Basic Principles *heavy emphasis on learning investigatory skills in the science and social areas *highly collaborative involving teacher-practitioner *dominated by consultation and independent instuructional materials to master patterns. *emphasizes selective exploration of key topics. *engages the student in problem-solving and problem-finding. *focuses on process skill development in inquiry. *content is viewed as less important that student interest. *focus on studying selected topics in-depth.	Basic Principles *emphasizes the importance of learning skills and concepts within a predetermined domain of inquiry *encourages content acceleration *students are evaluated and then provided with materials to master the prescribed subject areas. *lecture-discussion approach *teachers act as facilitators of instruction *employs existing school curricula and textbooks. *modifies . curriculum to facilitate faster mastery of subject areas.	Basic Principles *focuses on understanding and appreciation of systems of knowledge. *exposes students to key ideas, themes and principles within and across the domain of knowledge. *teachers take the role of questioner *students read, reflect, discuss, debate and write about their topics *is an enrichment tool.. *exposes students to a variety of topics. *emphasizes both intellectual and creative skills. *holistic approach in organizing content. *emphasis on the humanities.

Process-Product Model	Content Model	Epistemological Model
Evaluation *is product-based rather than proficiency-oriented	Evaluation *proficiency is content mastery	Evaluation *requires evidence of high level of aesthetic perceptions and insights.
Problems/ Criticisms *presents some organizational problems. *creates confusion regarding scope and sequence of learning. *creates a need for articulating new process and product dimension.	Problems/ Criticisms *requires a highly competent classroom manager as each student potentially could be working on an individualized program. **content area studies are not usuallly the focus of pull-out gifted and talented students.	Problems/ Criticisms *requires well trained teachers implement the program. *control over a consistent vision of concepts is sometimes difficult. *scope and sequence of curriculum is hard to develop.

Planning and Development

The literature suggests that whichever approach is taken, there are usually a number of component parts common to each curriculum (Bruch, 1986; Kaplan, 1975; Moon, Feldhusen, & Kelly, 1991; Treffinger, 1986; VanTassel-Baska, 1988). In Table 2.4 (Adapted from Treffinger,1981) the main global

components of curriculum planning for the gifted and talented have been itemized:

Table 2.4 Treffinger's Individualized Programming Planning Model

Component	Key Question(s)
1. Definition	What do we mean by gifted and talented?
2. Characteristics	What characteristics are associated with our definition
3. Screening and Identification	How do we document that students display characteristics?
4. Instructional Planning	What is our plan for responding to the students' needs?
5. Implementation of Services	How will we carry out our Instructional Plan?
6. Evaluation and Modification	How will we determine our success or the need for change in our plan?

Missing from this plan is a written statement of philosophy and goals. The preliminary step of sound programming should include: 1) stating one's position on gifted and talented education in general, (2) itemizing one's reasons for creating or supporting a given program, and (3) outlining the general and

sometimes specific goals of the particular program (Davis & Rimm, 1985).

Implementation

The school experiences of gifted and talented children have a great impact on their life-long learning style. Thus the implementation of appropriate curriculum is of utmost importance. As with all education there is not a set and prescribed method fulfilling the needs of all learners (Parke & Ness, 1988). Educators must be aware of the interests and needs of individual children and do their best to program curricula which will enhance their cognitive, emotional, and social growth.

How can educators hope to meet this gargantuan task? Researchers have suggested a number of useful ideas. (1) It is important that curriculum planners in the field of gifted and talented studies understand the strengths and weaknesses of accepted models of instruction (Hughes, 1991). This will make for decision-making that is based on fact and not feeling. (2) It is not always advantageous to choose one model and expect it to adequately cover the needs of all children, nor, last over a long period of time (VanTassel-Baska, 1986). Gifted and talented students have diverse and fluctuating learning needs. If these needs are to be met educators must be flexible in their approach to curriculum planning. (3) One model may lend itself more readily to different curriculum areas (Gallagher,

1982). (4) Student motivation plays a large role in choosing curriculum (Renzulli, 1978). This includes areas such as learning preference and style, task commitment and interests.

Researchers (Burns, Mathews, & Mason, 1990; Guskin, Peng, & Majd-Jabbari, 1988; Hughes, 1991; VanTassel-Baska, 1986) suggest that a confluent model, combining effective elements from the process-product, content and epistemological models, would provide a functional framework for curriculum development and instruction. Kaplan's Differentiated Curriculum model (1977) is an example of programming which combines the more effective elements from the various approaches to educating gifted and talented students. Based on educating a child proportionately with the child's ability to learn, the program provides multidimensional learning experiences and environments simultaneously addressing the academic, psychological and social needs of the learner.

Summary

Although gifted and talented individuals have been valued for their outstanding accomplishments throughout the ages, it has only been in the twentieth century that curriculum models, based on sound educational principles, have been formulated to address these exceptional skills. Still, a majority of Canadian and American schools continue to rely on 'teacher-made' materials. Three main models dominate programs and curricula being developed and currently in use: (1) process-

product model, (2) content model and (3) epistemological model. Recent researchers suggest that implementing a confluent model incorporating the strengths of all three models could provide a functional framework for curriculum development and instruction.

The development of solid curriculum for the gifted and talented continues to be an on-going process. Funding and resources available strongly influence progress made. Currently the area of gifted and talented education is 'in vogue' and researchers/educators are taking advantage of this time to continue much-needed studies in curriculum development and instruction.

The development of educational programs for the deaf has also experienced the whims of society as outlined in the following section.

Deafness

An Historical Perspective

Researchers (Moores, 1982; Vernon & Andrews,1990) indicate that deafness has always been part of all societies. The first accounts of the deaf appeared in early Egyptian and Mesopotamian literature, where the status and roles of the deaf fluctuated according to the type of societies in which they found themselves. Formal education (Boyd, 1966; Lawrence, 1970) was first introduced during this period of history with the focus on reading, writing and mathematics (Bowen, 1972). Talented and intelligent boys had unlimited opportunity for advancement while neither deaf boys or girls received little or no educational attention (Moores, 1982). Although evidence suggests that the attitude toward the deaf was ambivalent, laws were in place to prevent harassing, abusing or robbing. As the spoken word was held primary in religious ceremonies and speech was considered a manifestation of the human soul, deaf people originally were treated like helpless and retarded individuals (Feldman, 1970; Moores, 1982).

Conditions for the deaf during the Greek and Roman times became more harsh (Levinson, 1967). Greek philosophers generally believed that thought could be conceived only through the medium of the articulate word. This, coupled with Arisitotle's belief couched in his statement "Let it be a law

that nothing imperfect should be brought up", led to the destruction of deaf children by Spartans, Athenians and Romans (Feldman, 1970; Moores, 1982).

The fall of Rome was followed by the Middle Ages. During these times limited importance was attributed to education, culture and learning in general. Civil and religious restrictions were imposed on the deaf. These deprived the deaf of rights of inheritance, restriction from celebration of the Mass and denial of the right to marry without the express dispensation of the pope (Geanakoplos, 1976).

A sixteenth-century Italian mathematician and physician, Cardano (1501-1576), was the first to advocate the importance of teaching the deaf to read and write. He also believed that many abstract ideas could be explained through sign language. Cardano's writings were theoretical in nature and did not yield a practical solution (Moores, 1982; Quigley & Kretschmer, 1982).

A Spanish Benedictine monk, Ponce de Leon (1520-1584), was the first to establish a school for the deaf. Reading, writing and speaking were taught to the deaf sons and daughters of Spanish nobility (Alford, 1972). As little of Ponce de Leon's work was documented and his techniques not passed to a successor, there existed a thirty year interval before Bonet, in 1620, published the first book written on teaching the deaf. In his book Bonet advocated the use of a one-handed alphabet, early intervention and the importance of

a consistent language environment, principles which continue to be upheld in deaf education (Moores, 1982).

The education of individual deaf children from wealthy families continued until the late 1700's when schools for all deaf children were established (Bender, 1970). The majority of these schools were residential institutions with very few day school programs. During the ensuing years the major obstacle to educational progress centered around disagreement between advocates of an "oral-only" program and a combined oral-manual system of instruction (Dale, 1984; Moores, 1982).

From the 1700's until the early 1900's the residential school remained the main educational centre for deaf children. Few schools offered day programs and even fewer schools integrated deaf students into their mainstream programs (Vernon & Andrews, 1990). However, as (1) more money/program planning was funneled into the school divisions as a result of changes in legislation regarding the education of the disabled and handicapped and (2) trends in education focused more on 'home area schooling', the residential schools became less popular. At present, parents of deaf learners have more choice in where their child can be educated. A great number of children are integrated into mainstream classes, usually with the help of an educational assistant. Residential schools now provide services for both live-in and day students. The controversy surrounding optimal methods and programs for deaf students continues (Moores,

1982; Vernon & Andrews, 1990). Provisions for the more specific education of the gifted and talented deaf child will be addressed in a subsequent section.

Definition

Deafness "refers to the condition of individuals whose hearing is disabled and is expressed in terms of speech or other sounds calibrated for frequency and intensity" (Moores, 1982, pg. 6). It falls under the generic title of hearing impaired which alludes to any type of hearing disability, including 'deaf' and 'hard of hearing' (Moores, 1982; Quigley & Paul, 1984). A deaf person is one whose hearing is disabled to an extent that precludes the understanding of speech through the ear alone, with or without the use of a hearing aid. A hard-of-hearing person is one whose hearing is disabled to an extent that makes difficult, but does not preclude, the understanding of speech through the ear alone, with or without a hearing aid (Task Force on Childhood Hearing Impairment, 1985). Some individuals, however, function at levels that are not typical for their degree of hearing loss.

Prelingual deafness refers to the condition of persons whose deafness was present at birth or occurred at an age prior to the development of speech and language. Postlingual deafness refers to the condition of a person whose deafness occurred at an age following the spontaneous acquisition of

speech and language (Task Force on Childhood Hearing Impairment, 1985).

For the purposes of this paper the term 'deaf' will be used to include all categories of hearing impairment, recognizing deafness as a medical dysfunction of the auditory system and not a handicap (Cumming & Rodda, 1989).

Etiology

Heredity, maternal rubella, mother-child blood incompatibility, meningitis, and prematurity have been established as the five major identified causes of childhood sensorineural deafness (Martin, 1986). Hereditary childhood deafness accounts for more deafness than the other causes (Moores, 1982).

The term hereditary deafness, responsible for approximately 50 percent of all deafness, is a generic term covering over sixty kinds of loss that may be differentiated by type of transmission (dominant, recessive, sex-linked); age of onset (congenital, adolescence, adulthood); type of loss (conductive, sensorineural); and frequencies affected (low-frequency, mid-frequency or high-frequency) (Konigsmark, 1972). Evidence suggests that hereditary deafness, especially of a recessive nature, will continue to be a major etiological category for some time to come. Given the apparent low penetrance of some genes, the numbers of different genes that may cause deafness and mutations, and the high proportion of

hearing individuals who are carriers, the prevention of hereditary deafness is extremely difficult (Lappe, 1973).

During the 1960's maternal rubella was identifed as the greatest cause of hearing loss. The effects of a maternal rubella epidemic in Canada during 1964-65 continues to be felt and has generated major developments in deaf education (Vernon & Hicks, 1980). Rubella is a common viral disease that is frequently benign and difficult to diagnose. If contacted during pregnancy the virus will cross the placenta and attack the fetus, especially the tissues of the ear, eye and/or other organs. Rubella vaccines have significantly curtailed the number of deaf babies born, however the vaccine has not been disseminated as widely as needed and rubella continues to cause about 12 percent of deafness (Vernon & Hicks, 1980). Approximately 20 percent of women of childbearing age have had it and therefore developed an immunity (Masland, 1968).

Responsible for 5 to 7 percent of deafness, meningitis remains the most common cause of postnatal deafness. Meningitis usually involves a bacterial invasion by way of the air-cell system in the middle ear or by way of the meninges (Lindsey, 1967). The development of antibodies and chemotherapy has decreased the number of meningetic deaf (Vernon, 1967).

Evaluation of the impact of prematurity (defined as a birthweight of 5 pounds, 8 ounces or less) on the incidence of

deafness is difficult. Although it is evident that prematurity is more common among the deaf infant population than among the hearing, the degree is difficult to evaluate (Task Force on Childhood Hearing Impairment, 1985). As refined medical techniques improve the chances of premature babies being successfully delivered, it is expected that the number of children with deafness and other handicaps related to prematurity will increase (Moores, 1982).

Other risk factors contributing to childhood deafness include significant head trauma, mumps, recurrent middle ear problems, herpes, toxoplasmosis, syphilis and the mother's use of ototoxic drugs (Task Force on Childhood Hearing Impairment, 1985).

Categories of Hearing Loss

Researchers disagree on the exact decibel (dB) ranges for different degrees of hearing loss (Brill, MacNeil, & Newman, 1986; Karchmer, 1985; Martin, 1986). The following table is generally accepted and in currently in use by audiologists and educators (Karchmer, 1985; Martin, 1986). Table 2.5 outlines the different degrees of hearing loss, the effect of hearing loss on language and speech reception and expression, and educational and audiological intervention.

Table 2.5

Effects of Level of Hearing Loss

Hearing Level in dB(a)	Descriptive Terms of Hearing Loss	Probable Handicaps, Needs and Effect on Language and Speech
-10 to 26 dB(b)	Normal limits	No significant handicap for most children. Some at upper limits may have difficulty in sustained attention and may benefit from a hearing aid.
27 to 40 dB	Mild	Slight handicap for some, but significantfor many children. Difficulty hearing faint speech and speech at a distance; needs preferential seating; may benefit from lip-reading instruction; benefits from the use of a hearing aid. Will not usually experience difficulty in school situations.
41 to 55 dB	Moderate	Significant handicap. Understands conversational speech at a distance of 3 to 5 feet; needs a hearing aids, auditory training, lip reading, speech correction and preferential seating. May exhibit limited vocabulary and speech anomalies.
56 to 70 dB	Moderate to severe	Marked handicap. Conversation must be loud to be understood; difficulty in groups and classroom discussion even with a hearing aid; same needs as child with significant handicap; may be in a special class for the hearing impaired and integrated into a regular class. Is likely to have defective speech. Is likely to be defiecient in language use and comprehension. Will have evidence of limited vocabulary.

Hearing Level in dB(a)	Descriptive Terms of Hearing Loss	Probable Handicaps, Needs and Effect on Language and Speech
71 to 90 dB	Severe	Severe handicap. May hear a loud voice 1 foot from the ear; may identify environment noises; same needs as a child with a significant handicap; may enter a regular class at a later time. May be able to discriminate vowels but not all consonants. Speech and language defective and likely to deteriorate. Speech and language will not develop spontaneously if loss is present before 1 year of age.
More than	Profound	Extreme handicap. May hear some loud sounds; probably does ont rely on hearing as a primary communication channel; needs a special class or school for the deaf; some of these children may be integrated into regular schools. Speech and language defective and likely to deteriorate. Speech and language will not develop spontaneously if loss is present before 1 year.

(a) Average hearing levels for 500, 1 000, and 2 000 Hz (re: American National Standards Institute (ANSI) 1979 standards for pure-tone audiometers).

(b) Some children with levels within a normal limit are not free from otologic abnormalities, but these abnormalities are not necessarily educationally handicapping.

SOURCE: Summarized and adapted from J. Salvia and J.E. Ysseldyke, Assessment in Special and Remedial Education. 3rd ed. Boston: Houghton and Mifflin, 1985, p. 230 and S. P. Quigley and P.V. Paul, Language and Deafness. San Diego, CA: College-Hill Press, 1984, pp.4-5

There are exceptions to the typical effects of the various levels of hearing loss. Children with a minimal to mild (0 to

25 dB) or severe to profound (71 dB or more) loss, may function atypically for their degree of hearing loss. For example, a child with a minimal to mild hearing loss may have good oral communication, but imperfect comprehension skills, be inattentive, easily distracted, and display emotional immaturity. Conversely, a child with a severe to profound hearing loss may operate as well as a hard-of-hearing child. This may be due to excellent speech-reading and language skills.

Assessment of Hearing Loss

The degree of the child's hearing loss directly influences decisions concerning suitable audiological, educational and medical intervention. Pure-tone audiometry is used to assess hearing loss. It measures the sensitivity in each ear to intensity (loudness) and frequency (pitch). As the majority of English speech sounds are contained within three frequencies (500, 1 000, and 2 000 Hertz), results are reported as a pure-tone average (PTA) in the average ear. The average loss is measured in decibels (dB).

Researchers (Moores, 1986; Salvia & Ysseldyke, 1985) usually agree that a hearing loss of 25 dB or greater can impede a child's educational progress. Spontaneous language development and the development of auditory perceptual skills can be hampered by this loss. The likehood of educational difficulties increases with greater hearing loss.

Types of Hearing Loss

Types of deafness are based on the location of the damage. An explanation of these can be found in the following table.

Table 2.6

Types of Hearing Loss

Types	Explanantion of Damage	Amplification
1. Conductive	Decrease in attenuation. Barrier is present in the outer or middle ear. Sensitivity to airborne sounds is impaired by blockage. Usually treatable medically.	Usually excellent.
2. Sensori-neural	Most common of hearing losses. Damage to the sensory receptors of the inner ear. Occurs in bone-conducted pathways. Usually medically irreversible.	Partial potential. Depends on degree of damage.
3. Mixed	Sum of hearing loss produced by abnormalities in both conductive and sensorineural mechanisms. Usually medically irreversible.	Partial potential. Depends on degree of damage.
4. Neural	Damage to the auditory nerve after it leaves the cochlea. Usually medically irreversible.	Partial potential. Depends on degree of damage.
5. Central Auditoy Loss	Brain damage in the temporal lobe. An auditory processing problem. Usually medically irreversible.	Partial potential. Amplificaton may aid Depends on degree of extent of damage.

SOURCE: Adapted and summarized from F. Martin, Introduction to Audiology. 3rd ed. Englewood Cliffs: Prentice-Hall Inc. 1986, p. 75.

Education of Deaf Children

Overview

" It is doubtful that any area of its size in education has generated more heat and less light than the problem of educating deaf children. The field has been riven by debilitating controversies that have absorbed the attention and drained the energies of its most gifted educators, individuals who consequently have been reduced to approach problems within the framework of simplictic either-or, black-white polarities." (Moores, 1981, p. 3). The emphases in teaching deaf children have not changed a great deal until recent years. However they have been given a new urgency and direction in our rapidly changing and complex world.

"The challenge in the education of deaf students is to provide educational experiences commensurate with their hearing peers." (Alberta Education, Hearing Impaired Curriculum Guide, 1982, p. 6) The challenge is inherent within the special and unique problems the deaf student brings to the classroom.

Hearing children, by the age of three have the language structure that will serve them for the remainder of their life and by kindergarten age the average hearing child has an approximate 2,500 word vocabulary (Bloom & Lahey, 1978). On average the deaf student comes to school situation with language skills far behind his/her hearing peer. Many deaf

children reach school age with language skills which are primarily based on gesture and pantomime (Moores, 1981). Early intervention, amount of residual hearing, parental acceptance and attitudes, and the family's choice of communication system all contribute to the amount of language the deaf student brings to the learning situation.

Somewhat tied to limited language skills is the developmental lag of many deaf students (Conrad, 1979). Hearing children begin to improve their learning abilities in the first grade and continue to improve until the fifth grade. The deaf child does not begin to improve his/her learning abilities until the third grade and continues to improve until the eighth grade (Meeker, 1980).

Deaf children come to school with a variety of psychological strengths and needs (Vernon, 1990). The deaf child struggles to find his/her role and function in both a hearing and deaf world in addition to working through the developmental stages normal to all children. Again early intervention, family acceptance and attitude, residual hearing and amount of communication play vital roles in how well prepared the deaf child comes to school. Often the first few years of school are spent developing the skills and attitudes necessary to make the deaf child a receptive learner (Meeker, 1980).

There are increasing numbers of deaf children attending schools where American Sign Language is the language of

instruction and deaf culture accepted. For many deaf students there are significant problems as they struggle to accept and blend the home language and culture with that of school and peers (Vernon, 1990).

As the shift in etiology shifts from rubella and Rh-factors to high risk births, schools are beginning to notice an increased number of deaf students who also are physically and mentally handicapped (Moores, 1981).

In addition to these unique educational problems is the fact that much of the curriculum and teaching methodology in programs for deaf children has been designed to develop the English proficiency that hearing children bring to the learning process (Moores, 1981). Educators are struggling to change, focusing more attention on the strengths and skills the deaf child does bring to the learning situation and less on the deficiencies (Kirby, 1980). However, the changes are slow in coming and teachers in deaf education have few 'tried and true' techniques and methods to bridge the learning gap (Vernon, 1990).

Systems of Instruction

Formal schooling begins for many deaf children by age 2 or 3 and, for most, by age 5 years. The systems of instruction to which deaf learners are exposed and the influences on development are an enduring issue in the education of deaf children. Systems of instruction should not be confused with

teaching methods. The former deals with an over-all educational approach to teaching deaf children while the latter deals with specific teaching techniques and methods. (Teaching methods will be addressed in a subsequent section.) The century old "oral-manual controversy" has accounted for more confusion than any other question in the field of deaf education (Moores, 1982; Quigley & Kretschmer, 1982). This argument centers around oral-alone educators, who argue that all children must be educated by exclusively oral techniques, and oral-plus educators, who argue that at least some deaf children would progress more satisfactorily with simultaneously combined oral-manual communication (Powell, Finitzo-Hieber, Friel-Patti, & Henderson, 1985). With some variation, five basic systems of instruction may be identified:

1) Oral Method. In this system, also called the oral-aural method, children receive input through speechreading and amplification of sound and express themselves through speech. Gestures and signs are prohibited (Quigley & Kretschmer, 1982).

2) Auditory Method. This approach is described as basically unsensory as children are expected to utilize a sense which is not functioning. It concentrates on developing listening skills in children who are expected to rely primarily on hearing. Early reading and writing are discouraged, as is a dependence on speechreading and signs. Although this method was developed for children with moderate hearing losses, some

attempts have been made to use it with profoundly impaired children (Moores, 1982).

3) Rochester Method. This is a combination of the oral method plus fingerspelling. Children receive information through speechreading, amplification and fingerspelling, and express themselves through speech and fingerspelling. Reading and writing usually receive great emphasis (Vernon & McKay, 1990).

4) Total Communication. This is a combination of the oral method plus signs and fingerspelling. The children receive input through speechreading, amplification, signs and fingerspelling. They express themselves in speech, signs, and fingerspelling. Signs are differentiated from fingerspelling in that they may represent complete ideas and words rather than standing for individual letters of the alphabet (Dale, 1984).

5) Bi-lingual/Bi-cultural Approach. A relatively new approach, this method has been, to date, the most accepted by the Deaf. In theory, students are taught using American Sign Language and are immersed in Deaf culture. This acceptance of ASL and Deaf culture helps facilitate the learning of English as a second language and understanding of Hearing culture. Optimally, there are two classroom teachers, one deaf and the other hearing, both proficient in their understanding and acceptance of both languages and cultures (Vernon, 1985).

Deaf Education Methods, Theories and Techniques

For some time two techniques have been fundamently employed in educating the deaf learner. Aimed particularily at language acquisition, these have formed the underpinings for the overall education of deaf children (Moores,1981):

1) Analytical Technique. A course of instruction which advocates that lessons be developed in a step-by-step progression from least to most difficult. Deaf children are taught according to a set curriculum which does not deviate from its course.

2) Natural Method. Places great emphasis on children's experiences and the teaching of concepts as an outgrowth of children's needs.

These two techniques have been in use for approximately fifty years. Researchers (Kirby, 1980; Moores, 1981) suggest that these methods have not met with consistent success. Teaching techniques and methods employed by teachers of the deaf have been viewed in the past ten years as eclectic and in many cases haphazard (Vernon, 1990). Knowledge about the process by which deaf children learn is limited and methods and techniques of teaching deaf learners lack a theoretical base, leading teachers of the deaf to search for methods and techniques which are successful with their students (Moores, 1981).

Limited knowledge of the learning acquisition process, lack of sound and accepted theoretically-based teaching techniques and methods and the still raging battle over the 'best' environment for the deaf learner (i.e. oral vs total communication vs bi-lingual/bi-cultural etc.) has kept deaf education in its infancy stage.

Out of frustration teachers of the deaf have looked elsewhere to supplement this very meager educational base. As a result much of the methodology utilized by teachers of the deaf is steeped in the traditional techniques and methods used by teachers of hearing students (Moores, 1981). Of these some have come to the forefront of deaf education and are accepted and recognized as successful techniques and methods in meeting the needs of the deaf learner:

(1) Enactive Method. An actual hands-on process of interacting with the process the teacher wishes the child to acquire. Children have the opportunity to touch, feel, see and experience the concrete levels of the learning process. This method has been most successful with both deaf children and adults.

(2) Iconic Method. A step removed from the enactive method, iconic representation (e.g., photos) bridge the gap between the actual experience and the learning process.

(3) Individual Program Planning. An in-depth evaluation of the learning style and needs of individual deaf children is made and a team comprised of teachers, support staff and parents

maps out goals and objectives to best enhance successful learning by the deaf child.

(4) Top Down Learning. This theory of learning, based on a hierarchy of learning skills, provides the deaf learner with the 'whole picture' and then narrows the scope of cognitive acquisition to finer and finer points. Traditional knowledge acquisition begins with the language and experience the student brings to the learning situation. As deaf students often are unprepared for the learning situation because of limited necessary language and/or experience, providing the child with the finished process and then going back to the basics provides the deaf learner with the total picture. (e.g., When teaching about the story parts of fairy tales one technique the the top-down method might employ is to show the deaf child a number of fairy tale videotapes. The teacher then begins to evaluate the videotapes, working towards knowledge.)

(5) Spiral Teaching. Foundations of cognitive learning are built and extended as content area topics are taught and re-taught, each time adding more knowledge and skill to the basic foundation. Adapted from teaching methodology for the hearing, this application has proven successful with both deaf children and adults.

(6) Visual/Hands-On Teaching. Teachers of the deaf plan lessons around as much visual and hands-on experience as possible. Hearing children receive the majority of their

information through sound and the spoken word while the deaf child relies on visual and tactile means to gain knowledge. Providing visual and tactile cues is a cornerstone of solid pedagogical methods for teaching deaf learners (Moores, 1981).

The list of accepted and recognized teaching methods and techniques for the teacher of the deaf is meager. Most of these are adaptations of those methods and techniques found successful with hearing children. Teachers of the deaf in residential schools across Canada are finding that systems such as Whole Language and Teaching English as a Second Language have many approaches which are proving successful with deaf learners (A.C.E.H.I. Conference, personal communication with teachers of the deaf, July, 1991). Obviously there is a great need for further research and study before teachers of the deaf have adequate information regarding how deaf learners acquire knowledge and the best methods and techniques for imparting that knowledge. The following sections examine the problem deaf learners have in aquiring language and the results which occur when poor language skills and eclectic and somewhat haphazard teaching techniques are coupled.

Psycholinguistic Development

The term 'psycholinguistic' refers to all aspects of language acquisition and usage. It includes speech, grammar, pragmatics, and sematics.

Language acquisition, for a hearing individual, follows a spiraling path of imitation, expansion and induction. A normally developed child of 5 years will enter the school system with approximately 2500 words, will speak in complete sentences, and while continuing to make syntactical errors, will use all parts of speech (Bloom and Lahey, 1978; Joss, 1964; Moores, 1986). Deaf children acquire language differently. When their hearing loss precludes developing language auditorily, many deaf rely on a gestural communication system, i.e., sign language.

In North America, the more common manual communication systems include: American Sign Language (ASL), Signing Exact English (SEE), Signed Pidgen English (SPE) and fingerspelling.

The amount of language acquisition enjoyed by a kindergarten aged (5 years) deaf child depends on the severity of his or her hearing loss, environment, exposure to sign language, the extent to which the child has participated in structured language situations (e.g. pre-school) and use of amplification (Fraser, 1987; Moores, 1986). The majority of deaf children arrive at school with some language development delay (Bloom & Lahey, 1978).

Academic Achievement

Given the emphasis on language in the classroom, it should come as no surprise that, on average, deaf children are academically delayed by four to five years (Bess & McConnell,

1981; Moores, 1986). The difficulties of acquiring language and communication skills are attributed to this problem.

Data published by the Office of Demographic Studies (1972) offered insight into the academic achievements of deaf students in the U.S.A., based on Stanford Achievement Test (SAT) standardized scores. It should be noted that deaf students were frequently administered test batteries designed for younger children.

Scores on Spelling, Arithmetic Computation and Language (this test predominantly comprises knowledge of punctuation) were relatively high, compared with scores on other subtests. Lower achievement was found consistently on Word Meaning, Paragraph Meaning, Social Studies, Science and Work Study Skills. These lower scores draw attention to the difficulty deaf students often have in the area of language/communication acquisition as the tests are dependent on solid reading comprehension skills (Bess & McConnell, 1981; Moores, 1986). Scores on Arithmetic Computation were significantly higher than those on Arithmetic Applications and Arithmetic Concepts, as the former place less emphasis on reading than the latter. The problem deaf child have with language/communication acquisition is once again underscored.

The development of cognitive structure for deaf children appears to move from a less organized to a more organized state of general intelligence and from a perceptual and visual

orientation to a perceptual and abstract thinking orientation. Non-deaf children gain cognitive skills encompassing a dual system of abstract thought and general knowledge. As the deaf child becomes older, the perceptual component seems to merge into the factor of general intelligence as abstract thinking emerges (Moores, 1986; Zwiebel & Mertens, 1988). As curriculum is most often based on accepted theories of learning, deaf children could have difficultly with programs grounded in a dual system (abstract and general intelligence) of learning (Hergenhahn, 1988).

A recurring theme in academic achievement for deaf children is the mode of communication used in the home (Zwiebel & Mertens, 1988). For the deaf an overall factor of general intelligence is that it is heavily perception-oriented. The most frequent mode of communication in the home is speech alone, or a combination of speech and sign language. At school, a combination of sign language, fingerspelling, writing, gesture and speech, are the most common communication forms. This differentiation in communication could explain a lag in the general intelligence development. The lag could not be attributed to deafness itself, but to inappropriate responses by the parents or primary care-givers, to deafness (Moores, 1986).

Education of the Gifted and Talented Deaf Child

Overview

It is an understatement to say there is scarcity of research done in this area. There is a general lack of special curricula for the deaf outside of language, speech teaching and auditory training (Moores, 1986). Inherent in this situation is a shortage of development or modification of curricula specifically suited for exceptional deaf students; gifted and talented education being encompassed in the term 'exceptional'. In fact it has been reported that "normal and slow-learning deaf students were receiving the benefits of a great deal of energy and resources, while gifted deaf students were virtually being ignored" (Texas School for the Deaf Talented and Gifted Program, 1980, p. 4).

Programs for the gifted and talented do exist. However, with the rare exception of Gallaudet University and the Texas School for the Deaf, little research is available. Personal communication with a number of Canadian schools indicates that the majority either rely on programs/policies set down for hearing gifted and talented programs or depend on teachers to 'invent' appropriate projects and programs. This shortage of specialized curricula is reminiscent of the early stages of curriculum development for the hearing population. This

makes sense in light of the fact that deaf education, in general, is in its infancy.

Identifying Giftedness and Talent

Historically the deaf child has been placed in an educational setting conducive to meeting the special needs of his/her deafness. The learning potential of the deaf child, including any indications of special gifts and talents, has typically been ignored (Texas School for the Deaf, 1980). As educators have become aware of the gifted and talented deaf learners in the school system the problems of identification have surfaced.

Typically, emphasis is placed on communication/language skills when identifying gifted and talented learners (Whitmore & Maker,1985; Pollard & Howze, 1981). As one of the most outstanding problems of deaf students is communication/language the predominantly verbally-based tests provide a formidable obstacle (Whitmore & Maker, 1985). Until recently giftedness and talent were most often confirmed by an IQ score (Bibby, 1991). In the past the language of the IQ test often interferred with the results of the tests, however, educators now have begun utlizing more appropriate nonverbal tests (Bibby, 1991; Whitmore & Maker, 1985).

There remains a lack of suitable nonverbal tests (Fraser, 1987). In addition, the nonverbal tests which are available (e.g., Wechsler Intelligence Scale for Children - Revised; Lieter

International Performance Scale; Ravens Progressive Matrices) are either limited by the fact the directions are given verbally, have been criticized for the limited number of areas tested or are not normed for the deaf population (Fraser, 1987; Whitmore & Maker, 1985).

Current research (Fraser, 1985; Whitmore & Maker, 1985) indicates alternate identification methods are possible with gifted and talented deaf learners. Nomination forms (e.g., Rating Gifted Students; Nomination Form for Potentially Gifted Students; Scales for Rating the Behavioral Characteristics of Superior Students) have shown potential (Fraser, 1987). Alternate methods of identification, including parental and/or teacher interviews, data gathering about communication, mechanical aptitude, scientific interests, creative or sports ability and peer nomination forms are also showing some promise (Whitmore & Maker, 1985).

Gifted Characteristics

Deaf gifted and talented students are more often working to grade level, which is in contrast with hearing gifted and talented students who are usually working above grade level (Moores, 1986; Yewchuk & Bibby, 1988). Most deaf students typically work below grade level and encounter difficulties with language acquisition (Moores, 1986). Both hearing and deaf gifted and talented students tend to share similar characteristics otherwise (Taylor, 1989; Whiting, Anderson &

Ward, 1980). These include showing flexibility in thinking patterns, generating creative and original ideas, exhibiting a longer attention span, generalizing learning to a number of situations, leadership skills, pursuing endeavors with enthusiasm and intense curiosity.

Educating Gifted and Talented Deaf Students

If the number of methods and techniques accepted and recommended for teaching the average deaf learner are meager, the methods and techniques for addressing the needs of the gifted and talented deaf student are even more scarce. This area is very much in its infancy and requires much research and study.

Studies done by the Texas School for the Deaf (Texas School for the Deaf, 1980) and Gaulladet University (Gallaudet University, 1983) suggest the following when designing and implementing programming and materials for the gifted and talented deaf learner:

(1) Programs must be flexible in both design and use. Material should be structured enough to allow students to achieve goals while allowing for latitude to solve more complex problems.

(2) Materials must be clearly built on concepts requiring high-level reasoning skills, challenging the exceptional skills and talents of the deaf student. Materials for the gifted and talented deaf student should be flexible in design in order to permit a broader range of responses which would encourage

the student to exercise advance reasoning and analytical skills rather than regurgitation of learned materials. Care must be taken to avoid the task-oriented and highly structured/paced materials most often used with the average deaf child.
(3) Program design must include effective educational materials that address both the superior abilities and the communication deficits of the gifted and talented learner.
(4) Program design should capitalize on the deaf student's gifts and talents, be individualized to meet his/her particular needs and challenge his/her exceptional skills and abilities.
(5) Programming should extend and not replace the needs, interests and abilities of the gifted and talented deaf child, relating to his/her own particular learning pattern, style and environment.
(6) Programs should integrate learning experiences particular to gifted and talented deaf learners with those common to all gifted and talented students.

Curriculum development, program planning and materials designed to meet the specific needs of the gifted and talented deaf learner will require much attention by educators.

Summary

Historically, deafness has been a part of all societies with the status and roles of the deaf fluctuating according to the type of society in which they found themselves. The education of the deaf has largely fallen under the realm of special

education with the majority of deaf students in North America having been educated in residential school settings. Methods of instuction have varied over the years as parents and educators have struggled to agree on the optimal educational strategies. The two largest factions centre around "oral-only" and "signed" education.

Until recent years the deaf gifted and talented learner has not received adequate recognition in the classroom. For many years educators questioned the possibility of deaf students being gifted and talented. Recent research has established that 'deafness' and 'gifted and talented' can and do co-exist. Language and/or communication delays often precluded the identification and subsequent establishment of a specialized gifted and talented program for the deaf child. Researchers suggest that despite the fact that deaf gifted and talented learners function closer to their age-appropriate grade level than do their hearing peers, other characteristics tend to be similar.

Chapter Summary

Research points out the presence of both deaf and gifted and talented individuals throughout history. That deafness and giftedness and talent can be present in the same individual is still a recent discovery. Historically the educational path of the deaf individual and the gifted and talented person have

followed very different courses, with one exception. If born into a wealthy family the deaf and gifted and talented individuals were consistently educated, as society dictated the value of educated heirs. Otherwise, the roles and functions of the deaf and the gifted and talented student in society have followed divergent paths. The gifted and talented have been more consistently educated with the content of the programs fluctuating with the values of existing societies. These same societal values have dictated the role and position of the deaf including periods of time where they have been harassed, ignored and isolated. Validating the education of the deaf did not begin until the eighteenth century.

Curriculum planning for both the deaf and gifted and talented remains in its infancy. On-going arguments over the optimal methods of instruction for the deaf learner have hampered smooth progression in developing educational principles and methods for teaching the deaf learner. Research on gifted and talented programs has been plagued with low funding and inadequate resources as the interest in this area has waxed and waned .

Despite the problems which have plagued educating the deaf and gifted and talented, recent research has been exciting and thought-provoking. It has been established that giftedness and talent do co-exist with deafness and that despite possible language/communication delays deaf gifted and talented

children share similar characteristics and traits with their hearing counterparts.

Current research stresses several points: (1) further research is needed in the area of curriculum development for the gifted and talented, (2) the development of models and theories of instruction, based on sound educational principles and methods, is needed when addressing the deaf gifted and talented learner and (3) further examination of the characteristics and traits specific to the deaf gifted and talented student is required.

The balance of this thesis will attempt to add to the knowledge pool for educating the deaf gifted and talented learner. It will synthesize two modern educational approaches: (1) Kaplan's model of differentiated curriculum for the gifted and talented and (2) Whole Language, with the Manitoba Department of Education Curriculum for Grade Three. In turn the synthesized unit plan will be examined in light of educational considerations when introduced to a group of deaf learners.

CHAPTER THREE

THEME DEVELOPMENT THROUGH CURRICULUM DIFFERENTIATION AND WHOLE LANGUAGE

The review of recent literature and research in the previous chapter indicates that curriculum development and successful teaching techniques for the gifted and talented deaf child are extremely limited. The goal of this project is to add information to a meager knowledge pool by synthesizing Whole Language, Kaplan's Differentiated Curriculum and the Manitoba Curricula for Grade Three and to suggest ways to make this synthesized unit workable when working with gifted and talented deaf children.

This chapter addresses the goal by (1) outlining the basic premises of Whole Language, Differentiated Curriculum and the Manitoba Curriculum and (2) providing an example of a unit plan, "Patterns", synthesizing the three areas. Basic foundations and principles, utilization in the classroom, and evaluation of the three components will be outlined. The commonalities between the Differentitated Curriculum model and Whole Language and advantages of this synthesis for deaf learners are highlighted.

In addition, two grids will be presented. The first grid (Table 3.1) outlines the selected goals and objectives for the unit plan "Patterns" from across the Manitoba curricula. The second grid (Table 3.2) illustrates how selected goals and objectives from the unit plan are integrated and differentiated for the gifted and talented learners.

Differentiated Curriculum

Background

Three major problems in previous curricula and programming for the gifted and talented were the impetus behind the development of the Differentiated Curriculum model: (1) limited and limiting concept of the potential of gifted and talented students, (2) polarization of program and curricula on several levels and (3) fragmentation of curriculum materials and strategies (Kaplan, 1989).

The function of curricula and programs for the gifted and talented is to develop the child's exceptional potential. Many past approaches and models have stressed a product-oriented program developing specific abililites or creativity and ignoring the emotional needs of the learner. The Differentiated Curriculum model continues to develop the exceptional potential of the learner but at the same time values individual psychological needs. This is done by teaching gifted and talented students learning-to-learn skills, providing opportunities to succeed and fail in a 'comfortable and safe' classroom environment, and validating the depth and dimensions of the students' exceptional gifts and talents (Kaplan, 1983).

Gifted and talented students working in the regular classroom often feel frustrated and limited by objectives or teaching strategies which are inappropriate and by conflicting

expectations in 'regular' and 'gifted classrooms (Kaplan, 1989). In addition, teachers in the 'regular' classroom often suggest that a hierarchy exists between themselves and their colleagues teaching the 'gifted and talented' programs (Kaplan, 1989). The Differentiated Curriculum model advocates that gifted and talented students remain in the heterogeneous classroom with their peers. Classroom teachers are encouraged to cover necessary curricula under the auspices of broad themes, differentiating curriculum to meet the needs of all individual students and allowing gifted and talented students to maximize their potential and extend their knowledge base beyond the basic curricula requirements (Kaplan, 1989).

Curriculum materials and strategies for the gifted and talented tend to be highly fragmented and generally emphasize four main areas: content, cognitive skills, process and organization and affective goals (Kaplan, 1989). Kaplan's Differentiated Curriculum model recognizes the importance of each of these areas and incorporates all without fragmentation, instead utilizing a thematic framework approach and teaching skills in context. Pre-constructed programs and curricula especially designed for gifted and talented learners are avoided (Kaplan, 1989).

Foundations

Kaplan argues that programming for gifted and talented students should be built upon a firm philosophical and theoretical

base. This enables teachers to make enlightened, not whimsical, decisions. Three basic foundations underlie Kaplan's model of Differentiated Curriculum:

(1) All children share the need to be recognized for their potential as learners. In this way gifted and talented children do not differ from any other children. Each child requires equal opportunity for the development of his or her capabilities.

(2) Children differ, one from another. Educators have a responsibility to provide learning activities that differ to the same degree and to the same dimensions that children differ.

(3) In respect to gifted and talented children, educators must acknowledge two ages: chronological age and mental age. Curricula should provide equal educational opportunity for the gifted and talented by reconciling the chronological-age needs with their mental-age needs.

The purposes of a differentiated curriculum are : (1) to showcase a gifted and talented child's abilities, turning potential into performance; (2) to capitalize on the characteristics of the gifted and talented learner, attending to the degree and dimension which makes a gifted and talented learner different from a non-gifted and talented learner; (3) to utilize curricula to demonstrate the potential of the gifted and talented student; and (4) to provide gifted and talented children an appropriate and fair share of educational time and effort.

'nciples

A differentiated curriculum integrates four components of curriculum: (1) content, what we want the child to know; (2) process, how we want the child to learn; (3) product, the way in which learning is demonstrated; and (4) affect, the feelings and values we want the child to develop as a consequence of education.

The content component of a Differentiated Curriculum (Kaplan, 1989):

(1) emphasizes big ideas, generalizations, principles, theories and the relationship among ideas,

(2) teaches the language of the disciplines, how to bridge from one area of study to another, how to understand one discipline well enough and apply that learning to all areas of life, how to examine the impact of one discipline on another and how to enhance the meanings interdisciplinarily,

(3) teaches the extention of time and how to hold more than one time frame in mind at a time,

(4) draws attention to trends, re-occurrences of events and happenings and the effect they have over time,

(5) accepts that learned knowledge is not complete and closed and instills a desire for life-long learning,

(6) teaches scientific laws of nature, rules and laws governing society and examines the consequences and ethics of 'why' events occur,

(7) teaches how positive and negative conflict and tension can be used to reach resolutions in the areas of people, and society,
(8) helps to develop a usability index making each learner responsible for making knowledge usable,
(9) uses the Arts as a resource and back-up for all curricula,
(10) instills a sense of awe, appreciation and wonder of the world,
(11) develops a postive use of time and
(12) develops a sense of responsibility to use and share knowledge.

Knowledge elements are not taught as separate bits of isolated information. Utilizing universal themes provides a unifying structure for both the prescribed school curricula (designed to address what all children at a particular chronological-age should know) and a differentiated curriculum (designed to address what gifted and talented children of a particular mental-age should know). A differentiated curriculum provides for (1) sequential accumulation of knowledge over time, (2) continuity, wherein one idea reinforces another, in some meaningful way and (3) integration of knowledge into a meaningful whole. Acceleration and enrichment are combined through the use of an organized theme.

Process, the basic skills children need to know, includes developing a number of components: (1) literacy, basic skills of reading, writing, speaking and computation; (2) skills in problem solving, critical thinking, creative thinking, logical thinking, productive thinking; (3) skills specific to individual disciplines,

skills in research, enabling skills for movement from the known to the unknown and learning-to-learn skills.

The area of learning-to-learn skills is one of the key factors distinguishing the Differentiated Curriculum model from other models and approaches in educating the gifted and talented. These skills assist learners in maximizing their potential by teaching: (1) the joy of self discovery; (2) how to build new knowledge on the foundation of learned knowledge; (3) how to develop and sustain a support system of people who are instrumental in the learning process; (4) how to handle frustration, take risks, test the limits appropriately; (5) the language of learning - how to dialogue with others without hurting feelings, having intellectual discussion without evoking hostility, challenging teachers, parents, peers without appearing superior; (6) how to deposit knowledge for future learning investments, understanding that schools cannot teach all knowledge; (7) skills of research, accessing information, interpretation, report writing; and (8) skills of the disciplines and subject areas.

Product or outcome consists of the synthesis and transmission of knowledge and skills into a communication form. A product serves as a means by which learning takes place, an exemplar of the processes a student has learned and as an expression of a student's achievement. This includes: (1) productivity, task completion; (2) ownership and responsibility of the product; (3) applicaton of appropriate materials and techniques; (4) recognition and appreciation of existing artisans and works; and

(5) acknowledgement, to themselves and others, of responsibility to contribute to knowledge.

The affective domain, attitudes, values and social appreciation learned by the gifted and talented child is an integral part of Differentiated Curriculum. This would include (1) understanding and acceptance of personal feelings, capabilities and limitations; (2) understanding and acceptance of giftedness and talent; (3) capacity for intimacy; (4) productivity; (5) flexibility; (6) open-mindedness; (7) trust and acceptance; (8) respect and nurturing of others; (9) acceptance of differences; (10) respect and acceptance of others; (11) development of positive peer relations and (12) positive contribution to society. Paramount among affective considerations is an understanding of what it means to be gifted and talented and the consequences of these exceptional skills.

The Classroom

A differentiated curriculum provides gifted and talented learners "that which they need because they are like other children and that which they need because they differ from other children" (Kaplan, 1989, quotation from videotape). Gifted and talented children need heterogeneous groupings to meet both those needs. Curriculum must be individualized and differentiated for each child in the classroom, gifted and talented and non-gifted and non-talented. The challenge and responsibility for planning and implementation of themes largely rests with the classroom teacher.

Utilizing a thematic approach, the teacher initially identifies a broad topic or 'big idea', decides which disciplines (curricular areas) can be best met within its context, chooses activities and events to facilitate the learning, and, finally, individualizes or differentiates the program to meet the needs of all children. Discussions, brainstorming, and related follow-up activities promote development of the higher-level thinking skills, analyzing, synthesizing and evaluating. Skill work in the basic subject areas is taught using materials at the student's instructional level and adapted for the gifted and talented learner to avoid over-repetition and provide opportunity for creative application and critical thinking. Independent studies enable learners to become involved with selecting, structuring, executing and judging personal work in partnership with the teacher. Sharing the results is beneficial to both gifted and talented and non-gifted and talented learners. Teachers work from a firm theoretical and philosophical basis, secure in their knowledge of curricula, learning styles and pedagogy. They serve as a mentor or facilitator of learning and thinking rather than a dispenser of information. In addition, they create a learning environment that is both secure and stimulating. Teachers help children receive a good balance of learning experience that regulates intake and output, adjusts both the breadth and depth of an inquiry, provides small-and large-group and independent learning experiences and focuses on the quality of the learning experience.

Physically, the classroom accommodates small and large-group interaction and independent study. Materials and supplies are readily available. Printed material abounds. Children are encouraged to move freely and to access the school library and resource centers as needed.

Evaluation

Evaluation emphasizes individual progress rather than comparative or competitive ratings. Students are taught self-evaluation techniques, bridging thematic expectations and self-progress. In addition, learners are exposed to the standards for scientific methodolgy and rules for validation of empirical data and professional standards for judging products or performances in their interest areas. Students are encouraged to compare their present achievements against their past accomplishments.

Standard and traditional testing is evident but plays a small role in overall evaluation. Generally, the process of evaluation is used to expand not limit children. It reinforces what progress has been made, nurtures self-acceptance rather than self-judgment or denial, and assists students to develop their potential independent of external judgment.

Summary

The main function of Kaplan's Differentiated Curriculum model is to recognize, capitalize and nurture the exceptional potential of gifted and talented learners, utilize curricula to demonstrate the

child's potential, and provide gifted and talented children with their fair share of educational time and funding. This is done by teaching students learning-to-learn skills, providing a comfortable and safe classroom environment and validating the depth and dimensions of the learner's exceptional gifts and talent. Curriculum materials are taught with an emphasis on content, cognitive skills, process and organization and affective goals. The differentiated curriculum model is built upon a firm philosophical and theoretical base. Evaluation techniques and strategies are numerous and are progressive rather than comparative or competitive in nature.

Whole Language shares many common areas with Kaplan's Differentiated Curriculum model, as the following section will show.

Whole Language

Background

Whole Language was born primarily from teacher dissatisfaction with traditional and standardized teaching methods and the failure of open or confluent education (Altwerger, Edelsky, & Flores, 1987). Teachers of the early 1960's lamented the lack of child-centered programs and the emphasis placed on standardized curricula and evaluation. They felt quantity, and not quality, teaching covered the prescribed curricula but failed to meet the educational, social and emotional needs of the majority

of children (Newman, 1985). This school of thought was the beginning of open or confluent education. However, open education was widely distorted in that many open spaces were substituted for openness of ideas and learning centers for learning-centeredness. In addition, sound theories of learning and language were not incorporated in teaching. Open education was never implemented on any broad scale (Gemmell & Kniskem, 1991). From this confluent education movement Whole Language emerged, based on humanistic-scientific principles. It began as a grass-roots movement among teachers who were motivated by a positive view of teaching and learning, using a child-centred approach to implement a wide range of authentic, natural and functional materials to build language and literacy (Goodman, Goodman, & Hood, 1989).

Foundations

Whole Language is based on four basic premises - theories of language, theories of learning, a basic view of teaching and the role of teachers, and a language-centered view of curriculum (Goodman, 1986).

Whole Language is based on theories that language learning is easier when it is whole, real and relevant; when it makes sense and is functional; when it's encountered in the context of its use and when the learner chooses to use it. Language is both personal and social, driven by an intrinsic need to communicate and the extrinsic norms of society (Graves, 1989).

One of the key theoretical premises for Whole Language is that, the world over, babies acquire a language through actual use, not through practicing its separate parts until some later time when the parts are assembled and the totality is finally used. The model for thinking about and helping with the learning of reading and writing and learning in general is based on a model of acquisition through real use, not practice exercises (Altwerger, Edelsky, & Flores, 1987).

Whole Language is inclusive and indivisible (Goodman, 1986). The characteristics of words, sounds, letters, phrases, clauses, sentences and paragraphs can be studied individually but the whole is always more than the sum of the parts (Newman, 1985). It is understood that there is no language without symbols and system. Every dialect of every language has register and grammar. Summarily, Whole Language recognizes all languages and dialects, understanding that every language form constitutes a precious linguistic resource for the user (Gemmell & Kniskem, 1991).

The teacher in a Whole Language classroom does not use Whole Language as an 'approach' to reaching students but embraces the entire perspective. Teachers draw from a theoretical body of knowledge in carrying out their work, know about language, learning, children, curriculum and methodology, and take reponsibility for their successes and failures (Goodman, 1986). Whole Language teachers are aware of the universals of human learning, of language and cognitive processes, but they also recognize the different paths each learner must take. With this in

mind teachers seek to create appropriate social settings and interactions, and to influence the rate and direction of personal learning (Newman, 1985).

Attention to curriculum in the Whole Language classroom is based on four main tenets:

(1) Language is best learned when it is whole and in natural context, thus integration is a key principle for language development and learning. Speaking, listening, writing and reading all happen in context of the exploration of the world of things, events, ideas, and experiences. The content curriculum draws on the interest and experiences of the children and incorporates the full range of oral and written language functions. Thus, curricula begin with the learner's language and knowledge and build outward (Turbill, 1985).

(2) Choice, ownership and relevancy are essential. Children must own the processes they implement, feel that the activities are their own and important to their growth, and not waste valuable time and energy trying to please the teacher (Goodman, 1986).

(3) Language across the curriculum is of utmost importance. In the elementary classroom with one teacher, this kind of curriculum is not hard to achieve. It becomes harder as the students reach the junior high and secondary years and interact with a variety of different subject area teachers who may not all favor a Whole Language Approach. In the Whole Language school

all language development is integrated across the content areas (Newman, 1985).

(4) Whole language classrooms are organized around the use of themes. A theme provides a focal point of inquiry, use of language, and cognitive development. It involves pupils in planning, and gives learners choices of authentic, relevant activities within productive study (Goodman, 1986).

Principles

Whole Language is not a practice, method or approach. It is a set of beliefs, a perspective. Whole Language is a life style (Newman, 1985). Whole Language provides for the integration of reading and writing with other language arts and content areas of the curriculum. There is not an isolation of skills for instructions, nor isolation of processes from their use. Whole Language classrooms share a number of basic principles:

(1) Learning in school and out of school is the same. School learning is viewed as a continuation of pre-school learning. Teachers accept and respect the language and experiences the child brings to school and build from there. They build from the strengths and expanding what the child already knows. Learning is personalized, meaningful purposeful and relevant.

(2) Whole Language is based on current research in cognitive psychology, language development and language processes. The belief that language learning is a social event permeates the Whole Language classroom. There is a workshop atmosphere

where children interact and share. Some language learning is done with the support of others in a small group setting. Language learning is viewed as a transactional event whereby the construction of meaning is brought about as the result of the ongoing interaction among language users. Learning means risk-taking. The classroom environment must encourage and support learners in taking this risk. Children are encouraged to learn as much from their failures as from their successes.

(3) Emphasis is placed on process. Teachers watch students to observe where the child is in his/her process development and how he or she utilizes the process. Whole Language classes are individualized. Although every child may be given the same assignment, individualization occurs at the level of response. Each learner's growth is documented by dated writing samples, anecdotal journals and dated teacher comments regarding the child's reading.

(4) Meaning precedes form. For the most part, language learning moves from the gross (general) to the fine (specific). While learners move through approximations of speaking, writing and reading, the emphasis is still on meaning. Form and structure are organizers for the meaning and are introduced when need dictates organizational strategies. Whole Language classrooms are busy places. Children have lots of practice time involving daily reading, writing and speaking activities.

(5) Language learning is intrinsically motivating. There is joy in language learning and the child and teacher are in partnership to release that joy from within.
(6) Reading, writing and oral language are not learned in isolation but complement and support each other. All language is part of the whole communication cycle and is learned simultaneously (Gemmell & Kniskem, 1991).

The key to a successful Whole Language program is a teacher who understands language and language learning, who knows children's literature and who is willing to work creatively and diligently at using real language that is real language for real children (Newman, 1985). Whole Language classrooms should demonstrate that learning is prized and valued by students and educators alike.

The Classroom

In a Whole Language classroom the teacher is ultimately responsible for ensuring provincial curricula criteria are met. However, students and teacher both take an active role in setting the long and short term goals to satisfy those criteria. Group discussions, emphasizing democratic principles, respect and courtesy for all individuals and a common denominator of need for personal growth through risk-taking, provide learners with experiences in problem solving and creative thinking (Newman, 1985).

Physically, some educational settings lend themselves better than others for the Whole Language classroom. A room that is large enough to provide space for large group discussion and intimate corners for private work is preferred (Goodman, 1986).

The printed word abounds in the form of books, magazines, newspapers, directories, signs, labels, etc. There is usually a writing center complete with a wide range of paper and other materials. Students are encouraged to independently find and use materials as needed. Other centers are organized around topics and thematic units, structured to facilitate the integration of all subject areas.

Timetabling

Two basic considerations shape the organizations of classroom time: (1) children need large blocks of time and (2) children need a predictable time structure. Following is a commonly used classroom time schedule utlilized in the Whole Language classroom:

9:00 - 9:30	Shared language
9:30 - 10:00	Personal reading
10:00 - 11:00	Independent activity
11:00 - 11:30	Physical Education
11:30 - 12:00	Science
1:00 - 1:30	Personal writing
1:30 - 2:30	Math
2:30 - 3:00	Social Studies

The day is divided into a few large blocks to help to maintain continuity and flow in the shared language session and ensure plenty of time for creative exploration in independent activity. This schedule contributes to a safe, comfortable atmosphere since children feel they are in control of their day and know what to expect from each segment. At the same time, flexibility exists to allow for a lengthened shared language session or expand personal reading or writing sessions as interests or themes dictate. This is not to imply choices are to be made only during these periods but to underscore that time-usage in the Whole Language classroom is at the discretion of the students and teacher.

Shared language, personal reading and writing and independent activity and social studies and language classes contain the following elements:

* Shared language. A teacher-directed segment where children gather together to explore new literature and have discussions. A wide variety of literary forms and a vast number of authors are examined. These include complete texts (picture books, novels, traditional and modern books and poetry, rhymes, etc.), excerpts (small selections of larger works - fiction or non-fiction texts), graphic support material (maps, tables, timelines, graphs, etc.), mime, closed captioned films and videos, drama by high school deaf students and formats (organization of a dictionary, thesaurus, magazine, newspaper, etc.). A number of different works are introduced and explored daily and the students invited to continue in areas of interest during independent activity time.

* Personal reading time. As children learn to read by reading it is important to provide many opportunities for reading in the classroom. This is a daily period where children read a book of their own choice for simple pleasure. In the Whole Language classroom reading at all times is encouraged and children are urged to use any opportunity to read. A large number of reading materials, suitable for a variety of levels and interests, are available in the classroom. The teacher's responsiblilty during this time is to help students make suitable choices in reading material and to model a love of reading.

* Personal writing time. Writing is both an independent and communal process. It is recognized that writing is a process and that each child is a developing writer at some stage along the continuum of development. Children are encouraged to write about topics which interest them and to share that writing with others. The teacher takes the role of writing model, spending a few moments at the beginning of each session to demonstrate specific writing strategies and bringing in writing to show the class various aspects of the writing process. Regular writing conferences are held with the whole class and individuals. Editing and publishing are done in collaboration with the children. The children are in control of all aspects of their own writing process and take ownership for the work done. This includes the writing of books, research projects, letters, journals, etc.

* Independent activity time. During this one-hour session, the children are on their own in one of a number of activity areas or

centers. This covers a wide array of topics, all consistent with the current theme. The areas provide opportunities for the children to satisfy their need for greater independence, and at the same time serve to spur children on to read more, to question, to examine problems and offer solutions, to explore and to modify their own ideas.

*Social Studies and Science. During these periods the teacher or students have the opportunity to present and share information in these content areas. In a Whole Language classroom Social Studies and Science are included in a thematic format with other subject areas. By providing specific time on the timetable both teacher and student focus on the language, concepts, and genre particular to these areas. Teachers can choose to teach mini lessons or students may have specific information to learn or share.

The key to timetabling in Whole Language is flexibility. Teachers and students democratically decide the best use of time. Timetables are only an outline of what potentially could happen.

Evaluation

In Whole Language, evaluation is, for the most part, ongoing and occurs during the course of the teaching/learning (Goodman, Goodman, & Hood, 1989). It is an integral part of the curriculm and not treated separately. Self-evaluation is one of the most significant forms of evaluation. Whole Language teachers are not simply concerned with measuring changes in behavior but use

behaviors as indicators of developing knowledge and underlying competency (i.e. the teacher monitors the child's behaviour to ascertain where developmental progress/regression is being exhibited). Interaction, observation and analysis related to incidental, informal and formal procedures, with interaction tending to be more incidental and analysis more formal, are most commonly used to evaluate learning (Graves, 1989). Teachers are constantly evaluating linguistic and cognitive growth in knowledge and ideas (Goodman, Goodman, & Hood, 1989).

Reporting progress to parents is an important but secondary purpose of evaluation. Report cards and the giving of marks provide for an outgrowth of evaluation for improving teaching and learning (Newman, 1985). Standardized informal and formal evaluation measures may be used, but as a tool to provide additional information. Traditional evaluating techniques such as standardized or multiple-choice tests on lectures and textbooks are rejected because the content, nature and uses of such devices are in direct conflict with the philosophy of Whole Language.

Evaluation predominantly takes a functional approach, first evaluating what the student knows and then moving outwards to facilitate an expansion of knowledge.

Summary

Whole Language was developed out of teachers' dissatisfaction with traditional and standardized teaching methods. Theories of language, theories of learning, a basic view of teaching and the

role of teachers, and a language-centered view of curriculum are the basic premises of Whole Language. Curricula are organized around themes. Children are encouraged to take ownership of the processes they implement and the ensuing academic and social growth. Language and language acquisition is a key element in a Whole Language classroom, learned when it is whole and in natural context. The Whole Language classroom teacher is open to new ideas, supportive of his/her students, encouraging and warm. He/she is well versed in pedagogical theories. The classroom is a safe and comfortable haven for children where success and failure are equally valued as learning experiences. The printed word abounds. Evaluation is ongoing and an integral part of the curriculum. Self-evaluation is the primary form of measurement.

Differentiated Curriculum and Whole Language

Areas of Commonality

The Whole Language Approach and Kaplan's Differentiated Curriculum Model share many areas of commonality. Their common backgrounds, basic goals and objectives and over-all philosophies provide a basis for compatible blending in the classroom.

Both Whole Language and Differentiated Curriculum were born of educators' frustration with existing programs. The Differentiated Curriculum model evolved as Kaplan identified, in other approaches and models: (1) the problem of limiting

potential of gifted and talented students, (2) polarization of programs and curricula and (3) fragmentation of curriculum materials and strategies. Whole Language emerged as teachers began to question the traditional and standardized methods of instruction and began searching for methods to provide more child-centered, experience-based learning. The total focus of both models attends to the potential of all learners. The gifted and talented student is valued and respected for his/her exceptional skills and talents within a pedagogical framework which respects and values the skills and talents of all learners.

By utilizing a firm philosophical and theoretical base, both Whole Language and Differentiated Curriculum teachers make enlightened decisions recognizing the potential of all learners. Both models are grounded firmly in pedagogical theories of language and learning.

Both Whole Language and the Differentiated Curriculum model individualize the curriculum to maximize the potential of the learner. In Kaplan's model the curriculum is differentiated to respond to the degree and dimensions to which gifted and talented children differ from other children and at the same time acknowledges both the chronological-age and mental-age needs of gifted and talented students. In Whole Language the curriculum is individualized to recognize the difference in the academic and personal potentials of individual students in the class. Again the two models complement each other.

The Whole Language Approach and the Differentiated Curriculum model are organized around a central theme or 'big idea', integrating content, process, product and affect. Basic skills are taught in context. Programs are individualized to best realize the potential of each learner, teachers plan themes around basic curricula and disciplines, and design activites and events to facilitate learning by all students. Teachers are facilitators, 'enablers' and mentors, directing students in positive and productive directions, allowing students to make key choices in the learning process and creating a learning environment that is both secure and stimulating. Students are encouraged to take ownership of their own learning. The child's preferred language is respected. The physical environment is inviting and conducive to small-and large-group learning and independent study. Supplies and printed materials are easily available.

The evaluation process in both Whole Language and the Differentiated Curriculum model share common bonds of expectations. In both approaches evaluation emphasizes individual progress, is used to expand, reinforce, nurture and assist students to develop potential independence, is functional and on-going, and utilizes interaction, observation and analysis, and self-evaluation on the part of the learner and teacher.

In both the Differentiated Curriculum model and Whole Language Approach children are respected for their potential and differences and are encouraged to respect the potential and differences of others. This basic respect for self and others

credits all children for their skills, abilities and talents. This is most important for both the gifted and talented and the non-gifted and talented child. Most importantly Kaplan's Differentiated Curriculum model and Whole Language both value the learner as an individual, allowing for degrees and dimensions of difference, and striving to provide each student with the best possible education possible based on those individual needs.

The potential to blend or synthesize the Whole Language Approach and Kaplan's Differentiated Curriculum, based on their areas of commonality provides educators with a powerful educational tool. Classroom teachers can provide a program meeting the educational needs of all learners, with respect being paid to the potential of the gifted and talented learners as well as the non-gifted and talented students.

The advantages of blending Whole Language and Kaplan's model for regular classroom students are tremendous. However,what are the advantages for deaf learners?

(1) Teachers of the deaf find in these two approaches philosophical and theory-based teaching techniques and methods to meet the ever-changing needs of their students. The teacher is provided with a firm outline for conducting the class while the students are recognized for their varying strengths and potential.

(2) The needs of the gifted and talented deaf learner are often ignored in the classroom. Although class size is usually small, teachers of the deaf are challenged to provide curriculum-based programming for students with a wide variety of needs. Since the

gifted and talented deaf child learners the content areas easily he/she becomes 'the least of the teacher's problems', so the teacher focuses time and energy on the student with problems and ignores the needs of the gifted and talented deaf learner. By synthesizing the two approaches teachers of the deaf can be confident that the potentials and curricular needs of all students can be met. The time and efforts of the teacher are maximizied through differentiating the curriculum and thus enabling the teacher to reach both the gifted and talented deaf learner and the non-gifted and talented learner.

(3) Both the Whole Language Approach and Kaplan's Differentiated Curriculum model respect the individual. A recurring problem with deaf students is an ongoing search for identity and acceptance as they themselves come to terms with their roles and functions in the deaf and hearing worlds. Both models pay particular attention to the development of the child's affective potential. Teachers act as mentors and 'enablers' , providing growing and learning challenges within a secure environment. The deaf child has the opportunity to test the parametres, confident that he/she is respected for his/her choices but also aware that there are safeguards in place to protect the student's best interests if he/she strays too far from accepted norms and behavior.

(4) Both models respect the first and chosen language of the learner. In deaf education the battle continues over the 'best' language situation for students. In this synthesized classroom the

deaf student would be respected for his/her own choice of language. Teachers and students together could examine areas of residual hearing, speech potential, desire for speech, etc. and make respectful decisions.

These four broad areas of commonality provide powerful educational tools for the teacher and deaf students. For the gifted and talented deaf student the synthesis of Whole Language and Kaplan's Differentiated Curriculum model establishes and recognizes the need to maximize his/her exceptional talents and skills and provides firm pedagogical groundwork to begin the process.

Manitoba Department of Education Curricula for Grade Three

The Manitoba Department of Education Curricula for Grade Three are a set of content area curricula covering Language Arts, Mathematics, Science, Social Studies, Health, Art and Physical Education. The curricula are approved provincial guides, outlining information deemed necessary for all Grade Three students in Manitoba to know. These provinical guidelines must be utilized in the Manitoba public school system.

Committees, comprised of consultants, administrators, classroom teachers, psychologists and specialists , meet regularly to discuss and upgrade each subject area curriculum. As major changes in pedagogical purposes and approaches occur the curricula are updated to reflect the new innovations. Activities

are designed which relate to the developmental level of the child and strike a balance between understanding and skill. The curricula are spiral in nature, covering topics many times throughout the twelve grades. Curriculum guides are provided for each subject area in Grades One through Twelve. Each time the topic is approached deeper understanding and stronger skill development are targeted. The need to provide for individual differences among students leads to the use of a variety of teaching approaches and materials. The curricula are intended as guidelines and leave the individual teacher free to chose the best teaching approach for his/her class.

Curriculum guides for each of the content areas are designed to lend assistance in making decisions concerning unit planning and suggest optional units and objectivies which provide flexibility to each program. In addition, lists of recommended materials, including books, filmstrips, videotapes, kits, and possible field trips are coordinated for use with core topics.

Synthesis

For the purposes of this project a comprehensive thematic unit plan, centering around the theme "Patterns" was created. This was done by synthesizing selected goals and objectives from the Manitoba curricula for Grade Three with Whole Language and Kaplan's Differentiated Curriculum. Including the entire unit plan would make this chapter too long. To illustrate the workings of the unit plan, 'Weeks 1 and 2 - Pattern Identification' will be

presented as an on-going example of possible suggestions throughout the following discussion. The balance of the unit plan can be found in the Appendices A, B, C, D, and E.

Theme Preparation

Planning and organization, in keeping with the philosophies of both Whole Language and Differentiated Curriculum, are focused around themes. The themes incorporate subject areas from across the provincial curricula, weaving the areas together to provide a solid unit of study. It is not necessary to include each content area into every theme, however, over the course of the school year all provincial curricula goals and objectives are covered. Some themes are teacher initiated, with the children making contributions, while others stem from the children's interests and spontaneous responses. Plans are made flexible enough for change but provide a framework to carry the provincial curriculum standards required for Grade Three.

Goals, objectives, activities and projects are organized into a workable flowchart. Consideration is given to balancing skills (speaking, listening, writing and reading) and applications (activity or product) for each day, general scope and sequence, pacing and teaching time per day/week. A partial bibliography of materials, resources, possible field trips and resource people is compiled by the teacher. As the unit unfolds students have input on printed materials, kits, videos, resources and field trips.

Lesson plans are then prepared. These plans can take the form of short mini-lessons or extend over several days.

A flowchart is compiled outlining the general scope and sequence of the curricular topics. The expected time span of the unit is outlined but the flowchart always remains flexible. It is possible spin-offs and incidental learning could change the time frame and direction of the theme, based on mutual agreement by students and teacher.

Once the theme goals and objectives have been established the teacher and students can begin to brainstorm and establish possible activities, projects and interests within the subject areas. The teacher's role is to guide and counsel students not control or restrict the creative process. Students are encouraged to suggest activities and projects which are the most worthwhile and interesting to them, within the confines of the theme and curricular goals and objectives. The teacher makes the final decisions. Selections must carefully balance the interests and experiences of the students allowing the students to choose projects and activities which aid the realization of individual educational needs and goals/objectives while refraining from limiting creative and thinking skills imposed by restricting possible projects and activities.

A number of evaluation methods are common to both Whole Language and differentiated curriculum. These include self-evaluation by teacher and student, peer evaluation, conferences, checklists, tests, rating scales, summative evaluation and

anecdotal records. A combination of evaluation methods provides a comprehensive evaluation of the child's achievement of the theme's goals and objectives.

Whole Language can carry the goals and objectives of both the Differentiated Curriculum model and Grade Three Manitoba Curricula. All children, including the gifted and talented learner, are challenged to reach their potential. Goals and objectives of Whole Language, Manitoba Curricula and Differentiated Curriculum encompass all learners and differentiate according to individual cognitive, social and emotional needs. Teacher expectations and evaluation vary according to the individual student. Time constraints prevent students from participating in all suggested projects and activities. Children participate in those which pique their interest and are relevant to their personal learning. It is the teacher's responsiblity to encourage children to choose alternate projects if their thrust becomes too lopsided or if the student is not utilizing time to its best advantage. Children have the option of participating in small- or large-group or individual projects.

Choosing the Theme Goals and Objectives

Both Whole Language and the Differentiated Curriculum model advocate the teaching of skills under the auspices of a broad theme or 'big idea'. As there is a predominance of goals and objectives following an inter-related pattern in the Manitoba Grade Three curricula, the theme "Patterns" was chosen (see Appendix A for a complete list of goals and objectives).

Five specific skill and knowledge areas, pertaining to "Patterns", merged to form the main topics of this theme: (1) identification, (2) reproduction, (3) extension, (4) change, and (5) development of the new and different. An example of curricular goals and objectives for 'identification' are listed in Table 3.1 (Manitoba Department of Education Curriculum for English Language Arts -Early Years, 1982; K to 6 Math, 1978; K to 6 Science, 1979; Social Studies: Grade Three, 1982; Health Education: Early Years, 1988).

Table 3.1

Manitoba Curricula Goals and Objectives

LANGUAGE ARTS	MATH	SCIENCE	SOCIAL STUDIES	HEALTH
*Identify patterns in in a traditional fairy tale including time, setting, use of contrast, magic objects and/or enchantment, challenge, resolution and endings.	*Identify counting patterns to 100 by 1.2, 5 and 10. *Identify concrete physical and visual patterns. *Identify 3-D in nature. *Identify patterns in time days, weeks,	*Identify patterns in populations and habitat	*Identify patterns in community situations including climate, pysical features, transportation and celebrations. *Identify patterns in basic needs of people in similar and	*Identify patterns in promoting positive self-concept. *Identify patterns in the way family helps members to grow and develop. *Identify patterns in conflict resolution.

months, years	different
seasons.	countries.

These are the age-appropriate goals which all students in Manitoba must be exposed to during Grade Three. These goals and objectives, from across the content area curricula, have been selected and amalgamated to fit this theme. The specific curriculum goals and objectives for this theme were chosen because, as topics, there was a recognizable connection between them. For example, in math a discussion of patterns in the division of the year (i.e., months and seasons) easily lends itself to a discussion of animal habitation needs based on the seasons (science) and then into project work on the basic needs, such as shelter, of all peoples (social studies). Assisting children to recognize the bridges and inter-relatedness of topics is one of the main tenets of both a Differentiated Curriculum model and Whole Language.

Differentiating the Manitoba Curricula

How can the Manitoba Department of Education curricula goals and objectives be differentiated for a gifted and talented learner? From the provincial goals and objectives broad, general topic areas are identified. For example, all the Manitoba curricula goals and objectives listed in Table 3.1, are summarized into "Identify patterns across the various disciplines". For this project the selected provincial goals and objectives can be

summarized into five broad goals. These broad goals, listed under "Content" in Table 3.2, are differentiated for the gifted and talented learner through productive thinking skills, research skills, basic skills and products. Thus, once teachers establish that the gifted and talented learner is confident in his/her basic knowledge (i.e., Manitoba Curricula content area goals and objectives) the curriculum is differentiated to encompass the 'big idea' and to bridge content areas. The learner can extend the appropriate chronological-age knowledge from the provincial curricula to mental-age interests. The curriculum is differentiated to the degree and extent necessary to maximize the exceptional potential of the gifted and talented learner.

Table 3.2 (adapted from Kaplan, 1989) demonstrates how the five broad topics, summarized from the Manitoba Department of Education curricula, are differentiated for the gifted and talented learner. Building on basic mental-age knowledge, the gifted and talented learner is challenged to maximize his/her exceptional potential. The order of the content goals is based on the same hierarchy of skill acquisition as the broad "Patterns" theme, i.e, (1) identify, (2) reproduce, (3) extend, (4) change and (5) develop new and different patterns.

Table 3.2

Synthesis of Curricula Goals and Differentiated Curriculum

THEME: PATTERNS

CONTENT	PRODUCTIVE THINKING	RESEARCH SKILLS	BASIC SKILLS	PRODUCTS
Identify patterns across the various disciplines.	Demonstrate use of knowledge. Make lists and details. Infer.	Make notes and lists. Gather information from a variety of sources.	Classify and organize. Public speaking.	Written/oral reports. Graphs. Pictorial and art displays.
Identify the presence or non-presence or patterns.	Compare and contrast. Infer. Constructive criticism.	Collect data Infer. writtern forms, audiovisual, multimedia	Note taking. Discussions Small group collaborations.	Original stories and art. Pictorial and artistic displays.
Implement and extend patters across various disciplines.	Interpret. Dissect.	Use a retrieval system.	Identify main parts and themes in fairy tales, story lines, history, architecture, drama.	Charting. Change or extend existing story lines, history, architecture, drama.

CONTENT	PRODUCTIVE THINKING	RESEARCH SKILLS	BASIC SKILLS	PRODUCTS
Identify patterns in problem solving situations.	Generalize. Relate. Compare.	Survey of students and staff.	Develop a survey form.	Compile information onto an outline/graph
Implement and demonstrate patterns in conflict resolution situations.	Predict. Test. Evaluate. Judge. Value.	Search of printed materials, family, social and government model.	Small group leader and conflict resolver, including debate, persuasion,	Report writing including problem areas and ways to improve. Oral and pictorial presentaion.

Week by Week Outline

The flowchart of this unit plan (Appendix B outlines the remainder of the flowchart) is designed to cover a six week period: (1) Week 1 and 2 - pattern identification, (2) Week 3 - pattern reproduction and extension, (3) Week 4 and 5 - changing and developing new patterns and (4) Week 6 -conclusion and wrap-up. Table 3.3 provides an example of how the selected curricula

goals and objectives of the theme flow into and out of the content areas, linking the subject areas into a whole.

Table 3.3

Flowchart

Weeks 1 and 2 - Pattern Identification

The unit begins with a general introduction to the identification of patterns. The identification of patterns covers a wide spectrum and will be given two of the six weeks in order for students to establish a firm foundation. The subsequent steps of reproduction, extending, changing and developing patterns require that students have an excellent grasp of identifying patterns across the curriculum.

Children are first challenged to find patterns in the environment, arts, nature, literature, science and architecture. Physical, visual and auditory patterns are examined. Students then progress to identifying patterns in their everyday life, breaking down the patterns into hourly, daily, weekly, monthly, and yearly cycles. Examination of the calendar also provides an opportunity to identify numerical patterns. Yearly holidays, celebrations and seasons are discussed (Math). Attention to the changing seasons flows into the specific changes in basic needs of various cultural populations during the different periods of the year (Social Studies). Patterns of habitation, as a basic need, are examined. Animal family habitation is examined (Science). This attention to habitation can flow over into the patterns of habitation or settings in fairy tales (Language Arts). Other patterns in traditional stories such as characteristics, the presence of magic/enchantment, problems, conflict resolution, and endings are examined. The introduction of self-concept and conflict resolution among fairy tale characters allows the children to examine their individual patterns of conflict resolution and self-concept and the patterns of cause and effect when applied to personal behavior (Health).

Students are encouraged to identify cross-disciplinary patterns, generalizing patterns from one area of study into another.

Possible Centers, Projects, Activities and Lesson Plans

Upon selection of the theme goals and objectives teacher and students can begin to brainstorm possible centers, projects and activities. As the student works through the unit it is the teacher's responsibility to guide and counsel, encouraging each learner to maximize his/her own personal potential. Teachers can begin to compile lesson plans aimed at particular provincial goals and objectives.

Some centers, projects and activities are mandatory for all students. This allows the teacher to ascertain that provincial curricula goals and objectives are being taught. Crucial to the synthesis process, teachers are ensuring that all students, including the gifted and talented learners, are exposed to the provincial goals and objectives through mandatory assignments. Other centers, projects and activities are free-choice as students explore and expand their personal interests and knowledge. At the same time all learners, and in particular the gifted and talented student, have the opportunity to explore and expand their knowledge base through the free choice of a variety of activities and projects.

Table 3.4 outlines possible activities, projects, and centers plans for Weeks 1 and 2 - Pattern Identification (See Appendix C for Weeks 3-6). This listing is flexible, open to changes and spin-offs.

Table 3.4

Possible Centers, Projects and Activities

Weeks 1 and 2 - Pattern Identification

- Brainstorm and define different kinds of patterns.
- Do semantic webbing relating one discipline to another.
- Use attribute blocks to identify and define different kinds of patterns.
- Find patterns in the classroom - architectural, clothing, seating, colours, numbers, timetable, calendar, behavior.
- Visit a local art museum to identify patterns in art.
- Research the patterns of various art periods. Make an artistic/pictorial presentation of the findings. Present the findings to the class.
- On a nature walk identify nature-made and man-made patterns in the environment. Collect examples of both and make a display. Share the findings with classmates.
- Take a downtown walkabout and identify different architectural patterns. Take photos of the different patterns and make a picture collage. Display.
- Examine the calendar for patterns of even and odd numbers, skip counting patterns.
- Survey classmates and other elementary students to find patterns in hourly, daily, weekly, monthly and yearly activities. Make a graph of the survey findings. Make an oral presentation of the graph.
- Identify the characteristic patterns of 2-and 3-D shapes.
- On a nature walk identify 2-and 3-D shapes by these patterns.
- Read or view traditional fairy tales and identify the patterns in setting, characters, problems, conflict resolution, endings, themes.
- Identify the presence or non-presence of patterns in fairy tales. Access library books and compare the findings in a written form. Make a chart of findings.
- Identify the pattern of fairy tales from the same country.
- Compare and contrast fairy tale patterns between differing countries.
- Read or view modern fairy tales and identify the patterns in setting, themes, characters, problems, conflict resolution, endings.
- Invite parents, adminstrators, teachers, authors, friends, etc. to read or tell fairy tales. Compare and contrast the style patterns of the story reader or teller.

* Compare and contrast the patterns of modern and traditional fairy tales.

* Identify the patterns fairy tale characters utilize to promote positive self-concept. Make a visual representation of the findings. Make an oral presentation of the findings

* List patterns of behavior leading to positive self-concept.

* Ask a classmate to identify one area of positive self-concept needing attention in his/her life and make a contract to help him/her grow in this area.

* Take a field trip to a local museum or heritage village to identify, compare and contrast the pattern of basic needs of past and present.

*Invite a deaf senior citizen to visit. Prepare and ask questions centering on lifestyle patterns of the visitor's childhood, young adulthood, and the present.

* Identify similar and different patterns of climate, physical features, transportation, celebrations, traditions between several different countries. Make a pictorial/artistic representation of the findings.

* Research for patterns of basic needs for all people. Make a visual representation of research findings. Give an oral report of research findings.

* Compare and contrast the availability of basic needs in different countries. Make a written or visual report of the findings and present to the class.

* Invite people who have travelled to different countries to discuss and share pictures/slides/videos depicting patterns in the availability of basic needs and patterns in community situations and histories in the countries they have visited.

* Use the library and resource area to research habitation needs of different families of animals.

* Compare and contrast the habitational needs of animal families. Make a written or visual presentation of the findings.

* Take a field trip to the zoo to identify habitation patterns among animal families. Make a pictorial representation of the zoo trip findings.

Make an oral report of the zoo trip findings.

* Invite a local animal scientist to present information on the patterns of animal habitation.

* Have a whole class discussion identifying cause and effect patterns of acceptable and non-acceptable social behaviors. Make a chart to show the results. Ask children to identify patterns in their personal behavior which are acceptable and non-acceptable. Make personal contracts to work on maintaining acceptable behavior and changing non-acceptable behavior.

* Identify patterns in sounds, music, environment and speech using a variety of sources.

* Identify patterns in physical movement.

* Identify patterns of seasonal sports and activities. Make a pictoral representation of the findings. Present findings to the class.

*Additional projects and activities of interest to individual students or the class generated during the course of study.

Table 3.5 lists possible lesson plans the teacher may deem necessary to address provincial goals and objectives of Weeks 1 and 2 - Pattern Identification. Included in the lesson plan is the pre-knowledge students require before starting the lesson, goals, the teaching method and possible lesson extension ideas. The balance of possible activities, centers and lesson plans can be found in Appendix C.

Table 3.5

Possible Lesson Plans

Weeks 1 and 2 - Pattern Identification

Lesson Plan #1

Pre-knowledge

*patterns of traditional fairy tales including setting, characters, magic/enchantment, problems, conflict resolution, endings.

Goals

*identify patterns in traditional and modern fairy tales.

*compare and contrast the patterns.

*identify patterns and non-patterns in traditional and modern fairy tales.

*identify possible effects of the patterns and non-patterns.

*identify style patterns of various story tellers.

*identify those style patterns which provide the listener with the most enjoyment.

*enhance and extend co-operative behavior in a discussion.

Materials Required

*copies of the following fairy tales:

"Cinderella - The Untold Story"

"Goodnight, Cinderella"

"Cinderella on the Left"

"The Cinderella Show"

"Snow White in New York"

"The Strange Story of the Frog Who Became a Prince"

*copies or videos of the following:

"Snow White and the Seven Dwarfs"

"Cinderella"

"The Frog Prince"

*large sheet of paper to chart patterns.

*coloured markers.

Method

* Over the course of the week invite various guests to share traditional and modern fairy tales with the class. After each reading chart the known patterns of the fairy tale. Make note of any non-patterns and the effect they had on the story. List the style patterns of each reader.

* Have a whole class discussion by comparing and contrasting the identified patterns and non-patterns in the fairy tales, including the effect the non-patterns have on the story. Encourage children to state opinions, persuade others to change their point of view, debate and resolve conflict by using patterns of acceptable behavior.

* Have children develop a survey examining the identified patterns of story telling or reading. Poll other classes and make a pictoral graph of the results. Compile a chart of good story telling or reading characteristics. Children choose to work as a group or independently.

Lesson Extension

*Children write a follow-up thank you letter to invited guests including a constructive critique of their story telling or reading skills based on the compiled chart.

*Children begin to compile identified patterns of behavior enhancing group discussions into a resource manual for the class.

Lesson Plan #2

Pre-knowledge

*recognition of the numbers 1 to 100.

Goals

*to identify number patterns.

*to identify the pattern of odd and even numbers.

*to identify the patterns of skip counting by 1's, 2's, 5's and 10's.

Materials Needed

*a blank overhead grid divided into 100 squares, arranged in a 10x10 pattern.

*individual paper copies of the above.

*an overhead projector.

*coloured markers.

Method

* Begin by putting the blank grid on the overhead and asking the students to skip count by 1's. On or about the third row ask students if they can identify patterns in odd and even numbers which would assist them in skip counting by 2's, 5's, and 10's. Mark the patterns with different coloured markers.

*Students are given the individual grids and asked to fill in 1 to 100 and then use coloured pencils to identify alternate numeric patterns. This can be as a group or independent activity. Share results.

Lesson Extension

*Students could examine other number systems for identifiable patterns. Compare and contrast the results.

Lesson Plan #3

Pre-knowledge

*None.

Goals

*Identify patterns in art by artist and time period.

*Appreciation of the arts.

Materials Needed

*A selection of art books.

Method

*Display the work of various artists from different time periods. Ask the students to identify patterns by artist and time period. Examine colour, style, materials used, framing, subject matter.

*Compare and contrast the work of the artists and time periods to identify patterns and non-patterns.

Lesson Extension

*Research the historical impact society and culture had on the patterns found in the art of various artists and their time periods. Make a visual presentation of the findings. Share the results.

*Visit a local art gallery and identify the patterns in the current display.

*Invite a local artist to visit with a selection of his/her work. Students are encouraged to identify patterns in the work and ask questions about the why and wherefore of the patterns.

To successfully challenge and maximize the potential of each student the teacher must have an almost inexhaustible list of resources, including guest speakers, kits, videotapes, books, magazines, field trip destinations, and games. As the theme unfolds these resources will change and vary according to the needs and interests of the students and teacher. Students are responsible for accessing and/or suggesting additional resources. Appendix D contains a partial bibliography of possible resources for the "Patterns" theme.

Evaluation

Whole Language and Kaplan's Differentiated Curriculum model view the process of evalution similarly, that is, to determine the extent to which the unit goals and objectives are being achieved and the impact on student progress. The goals and objectives of the unit provide a framework for building an evaluation plan. Both models utilize a wide variety of evaluation techniques, with the primary focus on self-evaluation.

Table 3.6 provides a brief overview of the different evaluation techniques shared by Whole Language and the differentiated curriculum model. Evaluation examples (Appendix E) are based on the unit plan "Patterns" but could easily be adapted to other themes.

Table 3.6

Evaluation Techniques

Self-Evaluation

Both students and teacner continually monitor progress. Students monitor their own progress, seeking to improve areas of strength and weakness. At the conclusion of projects a self-evaluation form is filled out by the student and presented with the finished product to the teacher. The teacher monitors how students are feeling about their work, determines if the student is working within the goals and objectives of the unit and identifies areas of interest for future units. Setting realistics goals is an important part of self-evaluation and must be closely monitored by the teacher. The setting of unattainable or unrealistic goals by teacher or student is counterproductive. The self-evaluation forms are short and simple in design and cover salient components.

Teacher self-evaluation is aimed primarily at lesson plans, effectiveness of the planned unit and classroom management. These can take the form of anecdotal comments indicating

areas of strength and weakness in planned lessons and classroom management and suggestions for future improvement. The evaluation of the planned unit could be more formal in format.

Peer Evaluation

Peer evaluation is a most valuable tool as learners often accept the praises and criticisms of peers before the suggestions of adults. In addition, students bring a fresh perspective to projects and view the project not from a teacher's but a "doer's" point of view. Peer evaluation on projects can be initiated by the student or teacher. The format is short and succinct.

Conferences

Teacher and student regularly schedule conferences to discuss the progress of projects, general academic progress, classroom behavior, plans for time usage and re-alignment of goals and objectives. Teachers use this opportunity to compliment students on areas of improvement, brainstorm and problem solve in areas needing attention and improvement, allow students to express personal feelings, re-direct goals and objectives and build trust. Conferences can be initiated by the student or teacher at any time. Following the conference an anecdotal note is made by the teacher. These areas are used as a springboard at subsequent conferences. Teachers also use the notes to determine patterns of progress and problems in social, emotional, psychological and academic development. Conferences also provide opportunity for students and teachers to air grievances and participate in problem solving seeking resolution. The main purpose of conferencing consistently remains evaluation of progress and resolution of problems impeding progress.

Checklists

Checklists can be utilized in various areas including self-evaluation, peer evaluation and group presentation/participation. Students and teachers use checklists as a quick reference point. Yes/no, done/not done, included/not included, well done/poorly done and developed/needs development are possible categories for a checklist. Teachers can utilize checklists as a quick reference of students' cognitive and affective development, attainment of unit goals and objectives and assessment of group presentation/participation.

Tests

Tests, standardized and non-standardized can be an excellent diagnostic and evaluative tool. Teachers must remember tests are one of a number of methods available to gauge progress and keep the use of testing in perspective. Testing provides teachers with additional information sometimes unavailable from other evaluation methods. Standardized testing at the beginning and end of the school year can provide valuable information on cognitive development. Testing in academic areas can provide ready information on students' ability to work through a heirarchy of cognitive objectives. Pre-and-post testing in some subject areas arms teachers with useful knowledge on which to base lesson plan goals, targeting the needs of individuals and the group. Successful understanding of a unit's goals and objectives can be evaluated.

Rating Scales

Rating scales are a quick and efficient evaluation method. Self/peer/teacher evaluation and the assessment of interests and attitudes lend themselves well to this technique.

Anecdotal Records

The keeping of anecdotal records is a valuable tool when assessing student progress. Invaluable is information about home, family, interests, attitudes, etc., positively and negatively affecting personal and academic growth. Information can be kept in a log book or written on index cards and filed. Consistent and accurate record keeping is vital.

Summative Evaluation

Often done in chart form, a summative record of a child's progress through each theme provides an overview of cognitive and affective development, accomplishment of objectives, resources used by the child, activities and products resulting from the study.

Summary

Whole Language is the process which holds or 'glues' together a classroom of learners who demonstrate a variety of skills and talents and which supports the differentiation of the curriculum for all learners. While a Differentiated Curriculum model

respects all learners and values the skills and abilities they bring to the learning situation, its main focus is to extend and bridge basic mental-age knowledg the 'big picture' for a gifted and talented learner. Whole Language, on the other hand, focuses primarily on building a firm knowledge base, based (for this project) on the Manitoba Curricula goals and objectives. In the areas the gifted and talented learner exhibits exceptional skills the basic knowledge, taught through the provincial curricular goals and objectives, may be redundant. The gifted and talented child needs to learn new information and knowledge relevant to his/her mental-age skills and abilities. This is where synthesization occurs. By differentiating the curriculum the gifted and talented learner now can take this basic knowledge and extend his/her skills, bridging the content areas to develop a 'big picture' and develop new skills and abilities. The gifted and talented learner continues, with the entire class under the broad theme of "Patterns" but working and researching projects, most often, at a different and/or more advanced level. At the conclusion of the project both the gifted and talented and non-gifted and talented deaf children share their learned knowledge with their classmates, adding to a general classroom information pool. Simultaneously the academic needs of both groups of deaf children are met. In areas the gifted and talented child does not exhibit exceptional talents or skills, he/she fits into the regular class. Whole Language values and respects all learners and accommodates their various needs and abilities. Whole Language

allows the gifted and talented child to feel comfortable and safe, assured that his/her academic needs are being met in subject areas where he/she could be exceptional or not exceptional.

For this project flowcharts were constructed to demonstrate how one curricular area could flow into and out of another curricular area and show how the knowledge learned in one curricular area could act as a bridge to gain entrance into another curricular area. In Table 3.3 a verbal description outlining this motion is presented for the "Identifcation of Patterns" portion of the unit plan. Throughout this section of the theme, the gifted and talented learner can move easily between acquiring basic curricular knowledge or extending this basic knowledge to a higher understanding. By synthesizing a differentiated curriculum model with Whole Language the gifted and talented can easily make this transition.

Chapter Summary

Both the Whole Language Approach and Kaplan's Differentiated Curriculum model value and respect all learners and accommodate whatever skills, knowledge and abilities they bring to the learning situation. However, while Whole Language is a generic educational framework, welcoming and supporting all learners, Kaplan's Differentiated Curriculum model focuses on extending and stretching the exceptional skills and abilities of the gifted and talented learners in the classroom.

The Manitoba Department of Education sets out specific knowledge and skill goals and objectives in content area curriculum guides, deeming them chronologically-age appropriate for the grade level. Whole Language and the Differentiated Curriculum model take the provincial curriculum goals and objectives and organize them into themes of interest to students. Students are taught the curriculum knowledge through a mixture of activities, lessons, sharing, and projects. Kaplan's model extends further to differentiate the curriculum to meet the needs of the gifted and talented learner.

A variety of evaluation techniques are utilized with self-evaluation ranked as the most important. Students are encouraged to compete against themselves and strive to reach their personal best.

Students with a variety of skill and knowledge levels can be successful. When a Differentiated Curriculum model is synthesized with the main themes of Whole Language, the gifted and talented child has the opportunity to take the basic knowledge of the curriculum goals and objectives and maximize his/her potential by extending and adding to a basic knowledge base. Areas where the gifted and talented child may not have exceptional skills are accommodated under Whole Language and the child is given the opportunity to build basic skills along with other classmates.

The following concluding chapter will examine the educational considerations for the deaf learner. Strengths, weaknesses and

recommendations for employing the synthesized unit plan will be presented. In addition limitations and implications of this study and suggestions for future research will be presented.

CHAPTER FOUR

INTEGRATION, SUMMATION AND RECOMMENDATIONS

Methods of educating deaf learners have been and continue to be controversial. In the early centuries the deaf were put to death because of their handicap and it was not until the fifteen century that educators began to examine the possiblities of teaching young deaf learners to read and write. In the ensuing time educators have battled over the optimal educational methods for the deaf student, with popular opinion waxing and waning between oral and manual methods. These controversies continue in the field of deaf education and because so much time has been spent on the 'communication wars' the area of teaching methodology remains limited.

In this chapter an overview of this limited teaching methodology will be presented. This will serve as background information as the strengths, weaknesses and recommended suggestions for implementation of the synthesized unit plan are discussed. In the concluding portion of this chapter the limitations and implications of this study and suggestions for futher research are presented.

Project Overview

A review of current literature and research pertaining to (1) the gifted and talented, (2) curriculum development for the gifted

and talented, (3) deafness, (4) education of the deaf and (5) education of deaf gifted and talented learners was presented. A detailed study of Kaplan's Differentiated Curriculum model and the Whole Language Approach was done. Areas of commonality between the two models were noted. In addition, background information on the Manitoba Department of Education Curricula was presented. A six week unit plan for a Grade Three class was created, synthesizing the Differentiated Curriculum model, Whole Language and the Grade Three Manitoba Curricula. A portion of the unit plan was used to illustrate how the goals and objectives from the Manitoba curricula could be differentiated to meet the needs of gifted and talented learners, all under the auspices of the Whole Language approach. The remainder of the unit plan, including Manitoba curricular goals and objectives, a flowchart of the unit, possible activities, centers and lesson plans, a partial bibliography and evaluation technique examples were included in Appendices A, B, C, D, and E.

The special and unique challenges the deaf child brings to the education system were listed. An overview of the considerations educators must make when teaching deaf children as well as gifted and talented deaf students was presented. Possible strengths, weaknesses and recommendations for adaptation of the synthesized unit plan were discussed.

Advantages of Synthesizing Whole Language and Differentiation Curriculum

There are many advantages for the gifted and talented deaf learner when Whole Language is synthesized with the Differentiated Curriculum model The primary advantages deal with the philosophical and theoretical similarities between the two approaches. Both models provide the gifted and talented deaf learner with a safe and challenging environment to maximize his/her gifted potential and at the same time address the needs of possible language and developmental delay.

Following are a list of advantages for the gifted and talented deaf child in a Whole Langauge/Differentiated Curriculum classroom:

(1) The primary strength of utilizing a Differentiated Curriculum model and Whole Language is the respect given to the individual student. Each of the learners in the classroom is accepted for him/herself and emphasis is always placed on reaching personal potentials. Goals and objectives of a theme are differentiated depending on the strengths and weaknesses of the individual. A typical classroom of deaf learners often contains one or more students who have a behavior or learning difficulty (e.g., a maternal rubella child). As a result teachers are faced with classrooms where the skill levels can fluctuate widely. Teachers are frequently stretched to the limit implementing programs meeting the needs of each child. A gifted and talented deaf

learner in this situation may not receive the attention and program planning necessary to fulfill his/her potential. Differentiating the curriculum allows for the preparation of studies which can attend to the individual learning needs of all students. It permits the teacher to plan an overall theme, which is of interest to all the children, and differentiates the curriculum to expand, foster and challenge each child. Gifted and talented deaf learners can receive a fair amount of educational attention along with their classmates.

(2) A top-down learning approach is emphasied in the synthesized unit plan. Providing the deaf learner with the 'whole picture' and progressing to specific points permits students to generalize large concepts and move towards internalizing individual components. Students utilizing American Sign Language (ASL) benefit from the top-down model, as one underlying concept of American Sign Language is to communicate an overall picture of discussion topics and narrow towards the specific. The gifted and talented and non-gifted and talented deaf child can both gain from the top-down model.

(3) Characteristics of deaf and hearing gifted and talented learners are similar but not identical. The most specific difference is that hearing gifted and talented students generally work above grade level while deaf gifted and talented children most often work closer to grade level (Whiting, Anderson,& Ward, 1980). The differences in characteristics become less important when the synthesized unit plan is employed. The gifted and

talented deaf child is recognized for the characteristics he/she brings to the learning situation and the goal of maximizing his/her potential remains constant. For gifted and talented deaf children with limited language and/or academic skills this point is especially important. Both Whole Language and the Differentiated Curriculum validate the importance of the personal gifted and talented characteristics which the deaf student brings to the learning situation and provide an outlet to utilize and expand knowledge.

(4) Differentiated Curriculum provides the gifted and talented deaf student with a competition-free environment. Whole Language and the Differentiated Curriculum advocate personal betterment and not competition with others. Evaluation emphasizes maximizing personal potential by fulfilling individual goals and objectives.

(5) One of the underlying principles of Kaplan's model is that gifted and talented children remain in the chronological-age classroom with their peers. Curriculum is differentiated to meet individual needs and the gifted and talented learner has the opportunity to develop appropriate social skills with children his/her own age. The gifted and talented deaf child benefits from this approach. Often segregated in special schools or classrooms because of their deafness, there is the added burden of isolation from peers when excluded due to their special gifts and talents. For deaf children in a residential school, a setting where classes are traditionally small, this allows all students to learn together.

Differentiated Curriculum provides for both the chronological-age and mental-age growth of the gifted and talented deaf child with the minimum amount of segregation.

(6) A synthesized Whole Language and Differentiated Curriculum model allows for the individual programming so necessary for deaf learners, both gifted and talented and non-gifted and talented.

(7) Perhaps the greatest strength of synthesizing Whole Language and Kaplan's Differentiated Curriculum model is the the flexibility it affords both teacher and student. Teachers are free to use the enactive and iconic methods needed to boost language and developmental skills of all students and at the same time extend their lessons to challenge the higher cognitive, analytical and thinking skills of the gifted and talented child. This flexibility extends to the gifted and talented child as this synthesized approach allows him/her to explore areas of special interest within a supportive and challenging environment.

(8) Both the Whole Language approach and Kaplan's Differentiated Curriculum underscore the importance of accepting the first language and culture of the learner. This is paramount as the deaf child seeks to find his/her niche in the deaf and hearing world, family and deaf culture as well as deciding on the communication method best suited to his/her individual needs.

Disadvantages of Synthesizing Whole Language and Differentiated Curriculum

The disadvantages of synthesizing Whole Language and Differentiated Curriculum are more 'housekeeping' problems. None of the disadvantages listed are insurmountable but rather are areas administrators and teachers would be wise to attend to before placing staff in a synthesized program.

Following is a list of possible disadvantages when Whole Language and Differentiated Curriculum are synthesized:

(1) For the traditional teacher of the deaf, implementing a differentiated curriculum and Whole Language is a deviation from the structure of standardized methods of teaching/evaluating and could possibly be difficult. Accustomed to teaching identical programs to all students, utilizing evaluation based on graded tests and perhaps rigid in their personal teaching styles, traditional teachers could be hesitant to implement a program advocating open-ended learning and self-evaluation. The traditional teacher, familiar and comfortable with teacher-directed classrooms, may experience difficulties sharing the control of learning, project planning and problem solving with students.

(2) The inexperienced teacher of the deaf or first time consumer of Differentiated Curriculum and Whole Language could also encounter difficulties. Setting realistic goals and objectives and

establishing curricula scope and sequence is not easy. It could be difficult to set goals which are both broad and specific. Juggling the importance of providing an open-ended learning experience and zeroing in on small, specific skills could be awkward to manage. There could also be a tendency to set evaluation goals stressing written language and product, neglecting verbal, dramatic, emotional, social and artistic areas. The inexperienced teacher may also expect the gifted and talented deaf child to spend much of his/her time peer tutoring. There is danger that the classroom teacher, impressed by the gifted learner's exceptional skills and abilities, may expect the learner to become a 'co-teacher', thus depriving the gifted and talented deaf student of valuable learning time and opportunities to expand his/her own skills and abilities. As differentiation is most often evident in the activities and projects students undertake, this could be a potential pitfall.
(3) Setting up and implementing a Differentiated Curriculum and Whole Language classroom is labor- and time-intensive. Researching and becoming knowledgable about the 'big idea', planning, gathering books and materials, arranging for speakers, activities and fieldtrips, setting goals and objectives, incorporating provincial curricula, preparing learning centers, creating a warm but efficient classroom and daily evaluation require a major committment of time and energy. It could be estimated that an additional two to four hours beyond school time would be necessary based on the average amount of time teachers now spend preparing for daily classroom activitives. As

Differentiated Curriculum and Whole Language are child-centered approaches teachers must also be ready to expand or change direction as students express interest in related areas of study. This requires extra time. It could be argued that students become responsible for some of the planning and implementing. This is expected as part of the learning process, however, much of the responsibility lies with the teacher. Some teachers are unable or unwilling to commit themselves to this time-and labor-intensive task.

Adaptation Suggestions for Synthesizing Whole Language and Differentiated Curriculum

When synthesizing Whole Language and Differentiated Curriculum for the gifted and talented deaf learner a number of adaptations would be necessary. Many of the adaptations are more an awareness of possible educational problems when teaching a class of deaf students.

Following are a number of recommended adaptations to facilitate the smooth synthesis of Whole Language and Differentiated Curriculum:

(1) Research has indicated that the average deaf child is language delayed when compared to hearing children of the same chronological age (Moores, 1981). When implementing a differentiated curriculum it would be important to recognize this fact and make provisions to include ample opportunity for gifted

and talented deaf learners to expand language skills. Incorporating solid language learning in the areas of specific or general academics could be less challenging than in athletics, drama or visual arts. The opportunities to build language learning into the latter areas could be more difficult as the language acquisition opportunities may not be as easily accessed as in general or specific academic areas. Educators of gifted and talented children must be cognizant of this need and build opportunities to enhance and expand both written and verbal language.

(2) Differentiated Curriculum recognizes the natural language of all gifted and talented learners and validates the importance of the student's chosen language. However, the issue of first or natural language for the Deaf continues to be unresolved by educators. Controversy over oral, aural-oral and the different sign languages continues. Manitoba law recognizes American Sign Language as the first language of the Deaf but not all other provinces, at this time, have followed Manitoba's example. Educators implementing a differentiated curriculum for the gifted and talented deaf child must be aware of the controversy while valuing the chosen first language which the individual child brings to the learning situation. Gifted and talented deaf children must be free to utilize their language of choice and be respected for this decision.

(3) One of the basic teaching methods in deaf education is the extensive use of visual aids and a 'hands-on' approach to learning.

A differentiated curriculum and Whole Language recommends that learning should be relevant and interesting to the individual. By combining visual aids and 'hands-on' teaching techniques the teacher of the gifted and talented deaf learner provides the opportunity to understand and internalize relevant and interesting learning experiences. Although the gifted and talented deaf student has more highly advanced cognitive skills there still remains the problem of a language delay. The use of visual and 'hands-on' materials gives the gifted learner all possible clues to language acquisition and academic success.

4. Careful selection of classroom teachers for the gifted and talented deaf child is recommended. Teaching style, positive attitude towards new and innovative teaching methods and ideas, personal and professional flexibility, sound knowledge of learning theories, self-motivation, warm and caring personality and an all-encompassing curiosity would be included in the basic criteria for selecting a classroom teacher for a program dealing with gifted and talented deaf students.

Concluding Remarks

Current literature and research surrounding the gifted and talented, gifted and talented curriculum development, deafness, Kaplan's Differentiated curriculum model, the Whole Language Approach and the Manitoba curricula have all been highlighted. Within this amount of information it could be easy to lose sight of

the main objective of this project: Is there value in implementing Kaplan's Differentiated Curriculum model with a deaf gifted and talented population? The purpose of these concluding remarks is to address this question.

Yes, there is value when implementing a differentiated curriculum with a deaf gifted and talented population. In this project Kaplan's Differentiated Curriculum model is synthesized with the Whole Language approach. The underlying principle of both models is a respect for the individual learner. Maximizing the learning potential of each child is the common goal. When Whole Language is utilized in the classroom the focus centers around curricular goals and objectives. Learners are taught the material which the provincial guidelines outline as chronologically-age appropriate material. However, when the Differentiated Curriculum model is synthesized with Whole Language the curricular goals and objectives are extended past respecting and valuing the individual learner and focus on the degree and dimension of the child's exceptional talents. Differentiated Curriculum places value on the characteristics and traits which have identified a child as gifted and talented and differentiates the curriculum to the degree and dimension necessary to facilitate successful learning and academic growth for that gifted and talented learner. The Whole Language approach accepts each learner and theoretically strives to assist each child in reaching his/her potential. However, in practice in the everyday classroom Whole Language cannot hope to successfully

meet the needs of all learners (Goodman, Goodman, & Hood, 1989). Within the Differentiated Curriculum framework gifted and talented learners are valued for their exceptionality and programs are planned to take into consideration the degree and dimensions of the child's exceptional gifts and talents.

Can a Differentiated Curriculum be stretched to fit both the deaf gifted and talented child's exceptional skills and talents and cope with language/communication delays? The function of the Differentiated Curriculum model is to differentiate the curriculum to challenge the exceptional potential of all gifted and talented learners as well as address those needs of the student that are not exceptional. Within this frameword the special language/communications delays of the gifted and talented deaf student can be facilitated along with challenging his/her exceptional gifts and talents (Kaplan, 1989). Within a differentiated curriculum the language/communication delays can receive attention simultaneously within a curriculum which is designed to challenge the exceptional characteristics and traits of the deaf gifted and talented learner. Whole Language supports the deaf gifted and talented child as he/she attends to attaining chronological-age information while the differentiated curriculum model focuses on the mental-age knowledge and skills. Those characteristics and traits indigenous to a deaf gifted and talented population are valued as well as the characteristics and traits both deaf and hearing gifted and talented children share.

As one of the basic principles of a differentiated curriculum is to accept and respect the child's first (or chosen) language, the deaf child can be confident in using whichever language is most comfortable to him/her (Kaplan, 1985, videotape). This also defuses the educational problem of 'the best language of instruction (e.g., ASL, oral, Total Communication, etc.) for the deaf learner' .

In addition, a differentiated curriculum is designed to fit in with the pedagogical techniques and methods which best meet the needs of the individual learner. Thus teaching methods and techniques, such as an hands-on approach and visual learning, recognized and practiced in deaf education can be enhanced for the deaf gifted and talented student. This also applies to Kaplan's (1977) model utilization of a top-down learning method. Beginning with the 'big picture', knowledge is filtered down through an evaluation/synthesis process, instead of being presented in fragmented pieces to the child who is then expected to fit the knowledge together into a meaningful relationship. The latter, bottom-up learning, is a common teaching practise with hearing children where evaluation/synthesis is suspended until children have a large knowledge base. However, top-down learning is an accepted and practised method of teaching in deaf education. Research (Moores, 1982) indicates that deaf children assimilate concepts more easily if they clearly understand the 'big picture' and evaluate the component parts from the general to the specific.

Kaplan's Differentiated Curriculum model provides the necessary flexibility to meet the special and unique problems that the gifted and talented deaf child brings to the learning situation. At the same time educators are provided with the latitude to use teaching practices known to be successful with all deaf children and differentiate the curriculum to provide meaningful programming for the gifted and talented deaf learner.

Limitations

The synthesized unit plan was an exercise in blending the Whole Language Approach, Kaplan's Differentiated Curriculum model and the Manitoba Curricula for Grade Three. Further refinement, adaptation, research and testing would be necessary before the plan could be ready to utilize in the classroom. In order to implement the synthesized unit plan in the classroom it would be necessary to know the group dynamics of the students and teacher, the specific gifts and talents of the deaf learner in the class, any possible disabilities or problems of the students, and the accepted teaching method (e.g., Total Communication) in the school. The possible activities and lesson plans, etc. would have to be expanded to meet the needs and interests of the specific students in the classroom, and a teacher chosen open to experimenting with these approaches and models. Only with specific information about the school, students and teachers could the synthesized unit plan be adequately prepared for actual use.

The unit plan produced in this paper is based on general information.

In addition, the synthesized unit plan is limited to the segregated population of gifted and talented deaf learners. Differing results could occur if the unit plan were to be implemented in an integrated situation or with gifted and talented hearing students.

Implications

Professionals in deaf education acknowledge the presence of gifted and talented deaf learners in their school populations (Gallaudet University, 1983; Texas School for the Deaf, 1980; Yewchuk, Bibby, & Fraser, 1989). However, a review of the literature has indicated that the terms 'gifted and talented' and 'deaf' have been, until this century, almost mutually exclusive. None of the provinces report, at this time, curricula specifically developed for the benefit of gifted and talented deaf students. This information draws attention to the fact that gifted and talented deaf learners in Canada have had, and continue to have, little opportunity to realize their potential nor have they received a fair share of educational time and funding. Kaplan (1989) pointed out that gifted and talented students need only receive the same attention educators take for granted that 'regular' or special needs children will receive, to refine the skills necessary to liberate their special gifts and talents. Until schools and school

boards recognize the need for special programming and planning, with a full compliment of personnel and funding, gifted and talented deaf students will continue to be under-educated.

Many of the models of curriculum design targeted for gifted and talented children are not based on sound theories and principles of pedagogy (Kaplan, 1989) nor are they always appropriate for adaptation to deaf education (Moores, 1982). Teachers of the deaf, who have recognized the need for intervention with gifted and talented students, are often at a loss when choosing programs which adequately meet the needs of students. This 'hit and miss' method of choosing an intervention approach for the gifted and talented deaf student can cause irreparable damage as learners miss the opportunity to maximize their exceptional skills and talents. There is a need to develop curricula specifically for gifted and talented deaf learners, based on sound pedagogy and appropriate for their specific characteristics.

Lists of characteristics describing gifted and talented hearing children are abundant. Lists of characteristics describing gifted and talented deaf children are less abundant (Yewchuk & Bibby, 1988). The limited research available indicates spill-over characteristics shared by hearing and deaf students, however, recent studies (Bibby, in progress) are beginning to identify characteristics inherent in the gifted and talented deaf learner. Future appropriate curricula design is contingent on identifying these characteristics.

Suggestions for Further Research

As the literature has suggested, research and models for curriculum planning for gifted and talented deaf children are extremely limited. This study has served to accentuate the limited availability of research and literature pertaining to the overall area of gifted and talent deaf learners and the need for further investigation in every aspect of this issue.

Gallaudet University and the Texas School for the Deaf have begun to lay the groundwork in curriculum development and programming for the gifted and talented deaf learner. Results of curriculum development and programming at these two institutions closely mirror the principles, goals and objectives Kaplan suggests in the Differentiated Curriculum model. The Gallaudet and Texas School models are worth replicating, in whole or in part, with comparable Canadian deaf populations.

In addition, further research is necessary to compile a comprehensive reseach-based listing of characteristics indigenous to the gifted and talented deaf child. Limited research (Bibby, in progress) is being done but this remains a large and untapped territory. Some research (Yewchuk, Bibby, & Fraser, 1989) indicates that the deaf learner manifests gifts and talents in a similar manner to his/her hearing counterpart. These include quick understanding, superior recall, superior vocabulary, ability to grasp concepts easily, superior reasoning abililty and

inquisitivity. As Differentiated Curriculum planning and programming is contingent on the characteristics which identify the student as being gifted and talented, there continues to be a need for further study in this area.

Growing directly out of the present study is the opportunity to apply the planned comprehensive study unit to a classroom containing gifted and talented deaf learners. It would be beneficial to implement the presented unit plan, develop further units and extend the sythesis of Whole Language and Differentiated Curriculum to different grade levels.

Chapter Summary

Is there value in implementing the Differentiated Curriculum with a deaf gifted and talented population? The answer to this question, which is the underlying objective of this study, must be "yes". A differentiated curriculum places value on the characteristics and traits which identify an individual child as being gifted and talented and manipulates the curriculum to the degree and dimension the child needs to be successful. Unlike Whole Language, which attempts to meet the needs of all children, Differentiated Curriculum focuses on the exceptional skills and abilities of the gifted and talented child. The deaf gifted and talented learner is valued under a differentiated curriculum. Possible language/communication delays, accepted teaching methods and pedagogical principles in deaf education, the child's first or chosen language, and characteristics and traits indigenous

to the deaf gifted and talented child are all valued and sheltered under the broad umbrella of a differentiated curriculum. A deaf gifted and talented child can only succeed with a differentiated curriculum model.

Advantages of synthesizing the Differentiated Curriculum model with the Whole Language approach outnumber the weaknesses. These strengths include respect for the individual learner, acknowledgment of chosen language and culture, flexibility, and emphasis on personal improvement.

Possible weaknesses of Differentiated Curriculum and Whole Language are more 'housekeeping' problems. These include the potential problems of implementation by traditional or inexperienced teachers and the amount of preparation time necessary.

Suggested recommendations are aimed primarily at adapting teaching methods to meet the special needs of the deaf child. Emphasis was placed on visual/hands-on learning and the need for a language acquisition focus.

During the research of this project it was apparent there is a lack of programs and curricula, based on sound principles and foundations, developed for the deaf gifted and talented child. Further research is also needed in the area of identifying those characteristics and traits indigenous to the gifted and talented child. It is suggested that this project, an exercise in adapting Kaplan's model for the deaf gifted and talented, could be used with an actual class.

As educators acknowledge the presence of deaf gifted and talented learners in their classrooms and the search for programs valuing the characteristics and traits of these deaf students continues, Kaplan's Differentiated Curriculum has great potential to meet the educational needs of these exceptional students.

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APPENDIX A

Manitoba Department of Education Curriculum Goals and Objectives

The goals and objectives of the provincial curricula outline the information the Manitoba Department of Educations has established that all children in Grade Three should know. It is the responsibility of the classroom teacher to ensure that all the goals and objectives in the curricula are covered in the school year.

Once a general theme has been chosen the classroom teacher, sometimes with the assistance of the class, examines the various curriculum guides and pulls out those goals and objectives which lend themselves most readily to the theme. A balance must be struck between listening, speaking, writing and reading acitivities based on the curricular goals chosen.

Following are listed the curricula goals and objectives taken from the Manitoba Department of Education guides for the theme "Patterns".

Language Arts

* Traditional Literature - Fairy Tales

-identify parts of a traditional story (i.e.: time, setting, use of contrast, magic objects and/or enchantment, challenge, resolution, ending)

-compare and contrast fairy tales from different countries

-compare and contrast traditional (old) fairy tales with modern fairy tales

-develop sequencing skills through storytelling and drama (speaking)

-enhance reading skills through reading for both specific details and enjoyment

-develop editing skills through writing original fairy tales

-enhance listening and visual skills through attention to patterns in fairy tales

-enhance creativity and imagination by writing and telling original fairy tales for enjoyment

Mathematics

* Counting

-counting to 100 by 1's, 2's, 5's, and 10's

-read and write numerals up to 100

* Number Theory

-identify, reproduce, describe and reverse concrete, physical and visual patterns

-extend and change concrete, physical and visual patterns

-identify, reproduce and describe a pictorial pattern

-extend a pictorial pattern

-construct, complete and describe patterns using the one hundred pegboard

-detect or recognize and create patterns

-recognize patterns for even and odd numbers on the 100 chart

* Geometry

-classify 3-D shapes according to a specific attribute or characteristic

-identify 3-D shapes in nature

-compare 2-D shapes to show similarities and differences

-show similarities and differences of 2-D shapes in nature

* Time

-recall and illustrate (a) the divisions of the day, (b) the days of the week, (c) the months of the year, (d) the concept of yesterday and today and (e) relate daily, weekly, monthly, yearly patterns in everyday life.

* Graphing

-gather, record, and illustrate the data by means of (a) concrete graph, (b) concrete bar graph, (c) pictograph and (d) bar graph

Health

* Social and Emotional Well-Being

-identify ways to promote positive self-concept

-recognize that there are acceptable and unacceptable ways of expressing emotion

-identify ways the family assists members to grow and develop

-recognize the importance of friends and groups

-show interest in others

-identify positive ways to react and interact socially

-identify patterns in responding to conflict

-identify patterns in conflict resolution

Science

* Interdependency and Interaction among Organisms: Population

-define a population

-observe and identify populations in various environments and classify them as plant or animal

-define habitation

-match organisms to their habitat

-observe a community and identify its various populations

-identify the relationships between populations in a community

-predict how the removal of one population in a community affects the remaining populations

Social Studies

* Compare a Manitoba community and a Canadian/world community

-compare community situations (i.e.: climate, physical features, transportation, celebrations, etc.)

-compare community histories

-compare the similarities and differences among people, especially with respect to their basic needs

-compare the diversity in approaches to meeting needs among people with different cultural backgrounds

-compare the diversity in approaches to meeting needs among people in significantly different physical environments

APPENDIX B

Unit Flowcharts

The unit flowcharts are a written description of the connection and flow between content subject areas/curricular goals and objectives. As a Whole Language classroom does not revolve around specifically scheduled classes in Health, Science, Social Studies, Math, etc., it is very important for the classroom teacher to know exactly which curricular goals and objectives will flow smoothly into one another, always building on learned material and knowledge. One of the underlying principles of Whole Language is to examine the connectors between the different disciplines, allowing children to see and understand knowledge as a whole and not in fragmented particles.

The following flowcharts examine the flow of curricular goals and objectives of the theme "Patterns". It should be noted that not only do the subject areas flow together and build knowledge as an interconnecting image but that the weeks flow together, each week building and expanding on the knowledge of the preceding week.

Week 3 Pattern Reproduction and Extension

Students will continue the study of patterns, extending their knowledge of identification to reproduction and extension. Many of the learners will have begun this stage as they have become comfortable with the identification process. They will have developed their own patterns of identification, internalized them and proceeded to reproduction and extension.

Learners begin with the general and are asked to reproduce and extend the patterns in the world around them. The identified patterns in the environment, arts, architecture, nature, literature and science are reproduced and extended. Students will be asked in the identification stage to target behaviors acceptable to

productive problem solving and conflict resolution in a small group setting.

Because the general goals and objectives of the Manitoba Curricula were introduced to the children in the first two weeks of the unit, they are familiar with identifying patterns across the curriculum and will now reproduce and extend them. This will be accomplished through a series of projects, activities, lessons, field trips, and visitor presentations.

Week 4 and 5 Changing and Developing New Patterns

As the unit progresses use of higher cognitive skill development is necessary. Some children in the class may reach the reproduction and extension stage from Week 3 and find the inference and testing necessary to continue on to Week 4 and 5's change and development of new patterns very difficult. The teacher must continue to encourage and work with these slower students while continuing on with the unit in order to challenge the other learners in the classroom. Manitoba Curricula goals and objectives concentrate on the identification, reproduction and extension of patterns.

Problem solving and conflict resolution patterns identifed earlier in the unit and practised through the latest week of the unit will be more closely scrutinized and students will begin the process of testing, changing and developing new and appropriate patterns. In addition, students having difficulty with these new concepts will not be left to struggle through independent activities and will have suitable role models. It is important to validate the contributions made by all students and to accept the possible changes and new patterns.

Week 6 Conclusion and Wrap-Up

The children are now familiar with identifying, reproducing, inferring to extend, changing and developing new patterns. For the most part they are comfortable with manipulating patterns across

the disciplines. During this week students have the opportunity to return to or initiate projects of interest which time constraints limited them from doing earlier in the theme. Or they can use the time to expand and develop cognitive or affective areas needing additional learning time. The teacher has, over the past five weeks, closely evaluated students and now encourages learners to expand weak or undeveloped areas.

During this week the children are given further opportunities to share their findings with other classes, the administration, parents or the public.

APPENDIX C

POSSIBLE CENTERS, PROJECTS, ACTIVITIES AND LESSON PLANS

Once the curricular goals and objectives for the unit have been chosen and the flowchart constructed the teacher and students can brainstorm for possible centers, projects and activities. With a large number of possiblities the teacher can tailor-make the unit to meet not only the curricular goals and objectives but the special interests and needs of the whole class. The teacher can then plan possible lesson plans and start to assemble necessary materials.

Following is a list of possible centers, projects, activities and lesson plans for the theme "Patterns". As the unit proceeds the teacher and/or students may wish to change the direction of these possible choices. The curricular goals must be met but flexibility is paramount.

Week 3 - Pattern Reproduction and Extension

Possible Centers, Activities and Projects

* Reproduce the patterns of a traditional or modern fairy tale. Extend the pattern to include extra good and/or evil characters, added conflict.
* Reproduce the patterns of a traditional or modern fairy tale using different art mediums to depict the story.
* Invite a guest story teller or reader to re-tell the story and extend it with an original twist. Constructively critique the teller using the enjoyment chart.
* Reproduce and extend patterns using attribute blocks. Make a pictorial representation of the findings, labelling the different variety of patterns. Display the pictorial representations.

* Identify, reproduce and extend patterns in the classroom - architectural, clothing, seating, colours, numbers, timetable, calendar, behavior.
* Visit a local art and craft shop. Choose the art of one artist and report how the artist uses reproduced and extended patterns in his/her work. Reproduce some of the patterns to make the report more interesting.
* Research the patterns of various art periods. Make a pictorial display by reproducing the patterns.
* Using the photos from your city walkabout pretend you are an architect asked to replace some of the crumbling buildings. The city wants the original architecture preserved. Reproduce patterns. Display.
* Examine the calendar for patterns of even and odd numbers, skip counting patterns. Use a colored marker to mark the reproduction of the patterns.
* Identify the characteristic patterns of 3-D origami shapes. Reproduce the patterns.
* Reproduce traditional or modern fairy tales in the written form, illustrating the effects of the presence or non-presence of patterns.
* Reproduce and extend the patterns of fairy tales from the same country.
* Read or view modern fairy tales and reproduce and extend the patterns in setting, themes, characters, problems, conflict resolution, endings. Use drama or mime as the display showcase.
* Invite parents, adminstrators, teachers, authors, friends, etc., to read or tell fairy tales. Compare and contrast the style patterns of the story reader or teller. Practise reproducing and extending the skills leading to audience enjoyment. Videotape the results.
* List patterns of behavior leading to postive self-concept. Reproduce and extend these patterns in a debate situation. Evaluate your performance. Make a contract with a friend to help you improve in weak areas.

* Invent a new country. Utilize information from the museum or heritage village to reproduce and extend the patterns of basic needs. Make a display and share with the class.
* Invite a blind visitor to your class. Prepare and ask questions targeted at identifying patterns assisting the guest in his/her lifestyle. Blindfold yourself and try to reproduce these patterns.
* Reproduce and extend animal habitations in modelling clay.
* Practise reproducing and extending appropriate conflict resolution and problem solving skills. Make a booklet to share with classmates outlining the skills which produce the best results when applied to a small group situation.
* Reproduce and extend patterns in sounds, music, environment and speech using a variety of sources.
* Reproduce and extend patterns in physical movement.
*Additional projects and activities of interest to individual students or the class generated during the course of study.

Possible Lesson Plans

Lesson Plan #1

Pre-knowledge

*Patterns of fairy tales including setting, characteristics, magic/enchantment, conflict, problem solving, endings, themes.

Goals

* Reproduce and extend the patterns of fairy tales.
* Reproduce and extend the patterns of acceptable behavior in small group discussions.

Materials Needed

* Chart identifying patterns of traditional fairy tales.
* Large diagram of a hamburger.
* Separate components of the hamburger with extra 'fillings'.

Method

* Review and reproduce the pattern of fairy tales by comparing the various parts to the components of the hamburger -setting and ending by the top and bottom of the bun, characters representated by the meat and cheese, magic/enchantment by the condiments,

problem(s) by the lettuce and problem resolution by the tomatoes. Build a hamburger using a favorite fairy tale.
* Ask students to extend the fairy tale by adding extra 'fillings'.
* As a class write an extended and original fairy tale using the hamburger method. Use identified patterns of acceptable behavior to co-operatively write the story.
* Discuss the effects the extended fairy tales have on the enjoyment of the story.

Lesson Extension

* Experiment with different extra 'fillings' to write an original fairy tale.

Lesson Plan #2

Pre-knowledge

* Ability to identify and name various patterns using attribute blocks.

Goals

* To reproduce and extend known patterns using attribute blocks.
* Co-operative learning.

Materials Needed

* Attribute blocks.
* Some students may require a solid coloured mat to differentiate between the foreground and background.
* Chart of acceptable patterns of behavior in conflict resolution or problem solving situations.

Method

* Teacher displays patterns using attribute blocks and asks students to reproduce and extend the pattern.
* When the majority of students are comfortable in reproduction and extension ask for volunteers to lead the class. Students reproduce and extend patterns of accepted behavior to resolve conflict or problem solve.

Lesson Extension

* Students are invited to set up a file or box of cards depicting patterns using attribute blocks. Classmates can access the file to review or challenge themselves on reproduction and extension of the patterns.

Lesson Plan #3

Pre-knowledge

* Identification of patterns in daily, weekly and monthly school activities.
* Days of the week and months of the year.

Goals

* To produce a classroom calendar by reproducing and extending the current calendar.
* Utilize co-operative planning and activity skills.
* Reproduce and extend problem solving, conflict resolution and small group skills.

Materials Needed

* Large sheet of paper.
* Coloured markers.

Method

* Present children with the challenge of drawing up the next month's classroom calendar. Children to review identification of co-operative working patterns.
* Brainstorm for the components and tasks necessary to complete the calendar with inclusion of special activities and events, birthdays and holidays. Students divide jobs equally among themselves.
* Set a time limit to complete the project. Monitor progress.

Lesson Extension

* Make a yearly calendar reproducing and extending significant holidays and birthdates. Reproduce and extend a favorite artist's portrayal of the seasons. Use a variety of mediums to enhance each month.

Weeks 4 and 5 - Changing and Developing New Patterns

Possible Centers, Projects and Activities

* Use attribute blocks to change and develop new patterns. Ask classmates to test your patterns.
* Change and develop new patterns for time division. Work the class timetable into the new pattern.
* Change and develop new patterns in traditional and modern fairy tales. Depict the changes in a mime, drama, or written form. Share with classmates.
* Search for changed or new patterns in fairy tales from other countries. Make a chart to show the differences.
* Invite visitors to change or develop new fairy tales and share with the class.
* Change and/or develop new patterns of behavior leading to postive self-concept. Make a chart for the classroom. Refer and practise.
* Compare and contrast the habitational needs of animal families. Change the pattern of animal characteristics. Ask a friend to identify an appropriate habitat. Make a model or drawing of the new animal and habitat.
* Change and develop new patterns in sounds, music, environment and speech using a variety of sources.
* Change and develop new patterns in physical movement.
* Study historical or modern figures who tested, changed, or developed new patterns in travel, art, science, etc.
*Invite a local scientist to describe his/her current work and how it tests, changes and develops new patterns in their field of study.
* Invite a deaf adult to describe the effects Bi-lingual/Bi-cultural has in the schools and how lifestyle cultural and educational patterns have changed and developed because of it.
* Invite a researcher to discuss the effects of change and the possible development of new patterns has on his/her field.
* Additional activities, projects, or centers suggested by individual students or the class.

Possible Lesson Plans

Lesson Plan #1

Pre-knowledge

* Identification, reproduction and extension skills with attribute blocks and pictorial representations.

Goals

* Change and develop a new geometric pattern based on known quilting patterns.
* Work co-operatively to develop pattern.
* Develop fabric art skills.
* Work co-operatively towards project completion.

Materials Needed

* attribute blocks
* white paper
* fabric crayons
* quilting fabric
* quilting bat
* wool
* scissors, needles, rulers, pencil
* iron
* books of quilting patterns

Method

* Working with attribute blocks, review and reproduce known quilting patterns.
* Challenge the children to work co-operatively to change and develop a new and original pattern (s).
* Transfer the pattern(s) onto fabric squares using fabric crayons.
* Sew the squares together, assemble the quilt with batting and backing, sew edges and tie with wool.
* Decide as a group the fate of the quilt.

Lesson Extension

* Research the history of fabric and chart the patterns in development. Compare and contrast old and new fabrics. Judge

the strength, durability and colour of old and new fabric. Chart your findings and report to the class.

Lesson Plan #2

Pre-knowledge

* Identify, reproduce and extend the habitat needs of various populations.

Materials Needed

* Books and pictures of various populations and their habitats.
* Large chart paper.

Goals

* Identify new changes and developments in habitat patterns if natural habitat is removed or altered.
* Identify changes in lifestyle if the natural habitat is removed or altered.
* Improve research skills.

Method

* Review the natural habitation of a variety of animal families.
* Show pictures of major forest fires and animals fleeing their natural home.
* Identify changes in habitat and lifestyle patterns as a result of the fire.
* Provide students with large chart paper and have them depict pictorially and in the written form the effects of removal or alteration of habitation patterns. Access information from the school, home or public library and the resource center.
* Students report changed and new patterns to the class.

Lesson Extension

* Identify the effects on your community if your natural habitation were altered or changed. Take a survey of your neighbors and depict the results in graph form.
* Identify the effects on individuals if their natural habitiation is altered or change. Research the psychological, social and

emotional elements invloved and how individuals react to changed habitation patterns.

Lesson Plan #3

Pre-knowledge

* Can identify, reproduce and extend the patterns of basic needs for various populations.
* Is familiar with the concept of natural catastrophe.

Goals

* Test, change and develop the patterns of basic needs if too much of one basic need is introduced into an environment.
* Reinforce the pattern of positive large-group problem solving and conflict resolution.

Materials Needed

* world map
* large sand or water table
* sand, clay, mud, small pieces of vegetation
* large garden watering can
* chart paper and coloured markers

Method

* Review the pattern of basic needs for all people.
* Review the definition of natural catastrophe.
* Identify Bangladesh on the map. Use a relief map to construct the physical features of the country in the sand or water tray.
* Take turns being the natural catastrophe of excess rain and flooding. Ensure the students understand the flooding is salt water.
* List the possible effects of the pattern of basic needs by the introduction of too much of one need. Establish how it may alter the lifestyle of the population. Make a pictorial representation of the alteration in landscape and a written report on the possible effects this change in pattern may have on lifestyle.

Lesson Extension

* Identify how other natural disasters may alter or change patterns in basic needs and the effects it may have on patterns in

nature, environment, arts, scientific research, time. Make a report of the findings.

Additional Possible Projects and Activities

* Modify original fairy tales into a drama, video presentation, puppet show, mime.
* Share original writings or adaptations with another class, school principal, deaf senior citizens group, deaf pre-school class.
* Volunteer as a peer counsellor. Utilize the patterns ofconflict resolution and problem solving skills learned in this unit to help a peer develop needed skills.
* Videotape yourself as a story teller or reader. Self critique your skills based on the pattern of enjoyment chart. Practise new skills and re-video.
* Discuss ways various patterns help and assist us in our daily lives. List ways change would occur if the patterns were removed, altered or enforced.
*Additional projects, centers and activities as suggested by the students and/or teachers as the unit unfolds.

Lesson Plans

Lesson plans for this last week are dependent on need and can not be anticipated.

APPENDIX C

POSSIBLE CENTERS, PROJECTS, ACTIVITIES AND LESSON PLANS

Once the curricular goals and objectives for the unit have been chosen and the flowchart constructed the teacher and students can brainstorm for possible centers, projects and activities. With a large number of possiblities the teacher can tailor-make the unit to meet not only the curricular goals and objectives but the special interests and needs of the whole class. The teacher can then plan possible lesson plans and start to assemble necessary materials.

Following is a list of possible centers, projects, activities and lesson plans for the theme "Patterns". As the unit proceeds the teacher and/or students may wish to change the direction of these possible choices. The curricular goals must be met but flexibility is paramount.

Week 3 - Pattern Reproduction and Extension

Possible Centers, Activities and Projects

* Reproduce the patterns of a traditional or modern fairy tale. Extend the pattern to include extra good and/or evil characters, added conflict.
* Reproduce the patterns of a traditional or modern fairy tale using different art mediums to depict the story.
* Invite a guest story teller or reader to re-tell the story and extend it with an original twist. Constructively critique the teller using the enjoyment chart.
* Reproduce and extend patterns using attribute blocks. Make a pictorial representation of the findings, labelling the different variety of patterns. Display the pictorial representations.

* Identify, reproduce and extend patterns in the classroom - architectural, clothing, seating, colours, numbers, timetable, calendar, behavior.
* Visit a local art and craft shop. Choose the art of one artist and report how the artist uses reproduced and extended patterns in his/her work. Reproduce some of the patterns to make the report more interesting.
* Research the patterns of various art periods. Make a pictorial display by reproducing the patterns.
* Using the photos from your city walkabout pretend you are an architect asked to replace some of the crumbling buildings. The city wants the original architecture preserved. Reproduce patterns. Display.
* Examine the calendar for patterns of even and odd numbers, skip counting patterns. Use a colored marker to mark the reproduction of the patterns.
* Identify the characteristic patterns of 3-D origami shapes. Reproduce the patterns.
* Reproduce traditional or modern fairy tales in the written form, illustrating the effects of the presence or non-presence of patterns.
* Reproduce and extend the patterns of fairy tales from the same country.
* Read or view modern fairy tales and reproduce and extend the patterns in setting, themes, characters, problems, conflict resolution, endings. Use drama or mime as the display showcase.
* Invite parents, adminstrators, teachers, authors, friends, etc., to read or tell fairy tales. Compare and contrast the style patterns of the story reader or teller. Practise reproducing and extending the skills leading to audience enjoyment. Videotape the results.
* List patterns of behavior leading to postive self-concept. Reproduce and extend these patterns in a debate situation. Evaluate your performance. Make a contract with a friend to help y improve in weak areas.

* Invent a new country. Utilize information from the museum or heritage village to reproduce and extend the patterns of basic needs. Make a display and share with the class.
* Invite a blind visitor to your class. Prepare and ask questions targeted at identifying patterns assisting the guest in his/her lifestyle. Blindfold yourself and try to reproduce these patterns.
* Reproduce and extend animal habitations in modelling clay.
* Practise reproducing and extending appropriate conflict resolution and problem solving skills. Make a booklet to share with classmates outlining the skills which produce the best results when applied to a small group situation.
* Reproduce and extend patterns in sounds, music, environment and speech using a variety of sources.
* Reproduce and extend patterns in physical movement.
*Additional projects and activities of interest to individual students or the class generated during the course of study.

Possible Lesson Plans

Lesson Plan #1

Pre-knowledge

*Patterns of fairy tales including setting, characteristics, magic/enchantment, conflict, problem solving, endings, themes.

Goals

* Reproduce and extend the patterns of fairy tales.
* Reproduce and extend the patterns of acceptable behavior in small group discussions.

Materials Needed

* Chart identifying patterns of traditional fairy tales.
* Large diagram of a hamburger.
* Separate components of the hamburger with extra 'fillings'.

Method

* Review and reproduce the pattern of fairy tales by comparing the various parts to the components of the hamburger -setting and ending by the top and bottom of the bun, characters representated by the meat and cheese, magic/enchantment by the condiments.

problem(s) by the lettuce and problem resolution by the tomatoes. Build a hamburger using a favorite fairy tale.
* Ask students to extend the fairy tale by adding extra 'fillings'.
* As a class write an extended and original fairy tale using the hamburger method. Use identified patterns of acceptable behavior to co-operatively write the story.
* Discuss the effects the extended fairy tales have on the enjoyment of the story.

Lesson Extension

* Experiment with different extra 'fillings' to write an original fairy tale.

Lesson Plan #2

Pre-knowledge

* Ability to identify and name various patterns using attribute blocks.

Goals

* To reproduce and extend known patterns using attribute blocks.
* Co-operative learning.

Materials Needed

* Attribute blocks.
* Some students may require a solid coloured mat to differentiate between the foreground and background.
* Chart of acceptable patterns of behavior in conflict resolution or problem solving situations.

Method

* Teacher displays patterns using attribute blocks and asks students to reproduce and extend the pattern.
* When the majority of students are comfortable in reproduction and extension ask for volunteers to lead the class. Students reproduce and extend patterns of accepted behavior to resolve conflict or problem solve.

Lesson Extension

* Students are invited to set up a file or box of cards depicting patterns using attribute blocks. Classmates can access the file to review or challenge themselves on reproduction and extension of the patterns.

Lesson Plan #3

Pre-knowledge

* Identification of patterns in daily, weekly and monthly school activities.
* Days of the week and months of the year.

Goals

* To produce a classroom calendar by reproducing and extending the current calendar.
* Utilize co-operative planning and activity skills.
* Reproduce and extend problem solving, conflict resolution and small group skills.

Materials Needed

* Large sheet of paper.
* Coloured markers.

Method

* Present children with the challenge of drawing up the next month's classroom calendar. Children to review identification of co-operative working patterns.
* Brainstorm for the components and tasks necessary to complete the calendar with inclusion of special activities and events, birthdays and holidays. Students divide jobs equally among themselves.
* Set a time limit to complete the project. Monitor progress.

Lesson Extension

* Make a yearly calendar reproducing and extending significant holidays and birthdates. Reproduce and extend a favorite artist's portrayal of the seasons. Use a variety of mediums to enhance each month.

Weeks 4 and 5 - Changing and Developing New Patterns

Possible Centers, Projects and Activities

* Use attribute blocks to change and develop new patterns. Ask classmates to test your patterns.
* Change and develop new patterns for time division. Work the class timetable into the new pattern.
* Change and develop new patterns in traditional and modern fairy tales. Depict the changes in a mime, drama, or written form. Share with classmates.
* Search for changed or new patterns in fairy tales from other countries. Make a chart to show the differences.
* Invite visitors to change or develop new fairy tales and share with the class.
* Change and/or develop new patterns of behavior leading to postive self-concept. Make a chart for the classroom. Refer and practise.
* Compare and contrast the habitational needs of animal families. Change the pattern of animal characteristics. Ask a friend to identify an appropriate habitat. Make a model or drawing of the new animal and habitat.
* Change and develop new patterns in sounds, music, environment and speech using a variety of sources.
* Change and develop new patterns in physical movement.
* Study historical or modern figures who tested, changed, or developed new patterns in travel, art, science, etc.
*Invite a local scientist to describe his/her current work and how it tests, changes and develops new patterns in their field of study.
* Invite a deaf adult to describe the effects Bi-lingual/Bi-cultural has in the schools and how lifestyle, cultural and educational patterns have changed and developed because of it.
* Invite a researcher to discuss the effects of change and the possible development of new patterns has on his/her field.
* Additional activities, projects, or centers suggested by individual students or the class.

Possible Lesson Plans

Lesson Plan #1

Pre-knowledge

* Identification, reproduction and extension skills with attribute blocks and pictorial representations.

Goals

* Change and develop a new geometric pattern based on known quilting patterns.
* Work co-operatively to develop pattern.
* Develop fabric art skills.
* Work co-operatively towards project completion.

Materials Needed

* attribute blocks
* white paper
* fabric crayons
* quilting fabric
* quilting bat
* wool
* scissors, needles, rulers, pencil
* iron
* books of quilting patterns

Method

* Working with attribute blocks, review and reproduce known quilting patterns.
* Challenge the children to work co-operatively to change and develop a new and original pattern (s).
* Transfer the pattern(s) onto fabric squares using fabric crayons.
* Sew the squares together, assemble the quilt with batting and backing, sew edges and tie with wool.
* Decide as a group the fate of the quilt.

Lesson Extension

* Research the history of fabric and chart the patterns in development. Compare and contrast old and new fabrics. Judge

the strength, durability and colour of old and new fabric. Chart your findings and report to the class.

Lesson Plan #2

Pre-knowledge

* Identify, reproduce and extend the habitat needs of various populations.

Materials Needed

* Books and pictures of various populations and their habitats.
* Large chart paper.

Goals

* Identify new changes and developments in habitat patterns if natural habitat is removed or altered.
* Identify changes in lifestyle if the natural habitat is removed or altered.
* Improve research skills.

Method

* Review the natural habitation of a variety of animal families.
* Show pictures of major forest fires and animals fleeing their natural home.
* Identify changes in habitat and lifestyle patterns as a result of the fire.
* Provide students with large chart paper and have them depict pictorially and in the written form the effects of removal or alteration of habitation patterns. Access information from the school, home or public library and the resource center.
* Students report changed and new patterns to the class.

Lesson Extension

* Identify the effects on your community if your natural habitation were altered or changed. Take a survey of your neighbors and depict the results in graph form.
* Identify the effects on individuals if their natural habitiation is altered or change. Research the psychological, social and

emotional elements invloved and how individuals react to changed habitation patterns.

Lesson Plan #3

Pre-knowledge

* Can identify, reproduce and extend the patterns of basic needs for various populations.
* Is familiar with the concept of natural catastrophe.

Goals

* Test, change and develop the patterns of basic needs if too much of one basic need is introduced into an environment.
* Reinforce the pattern of positive large-group problem solving and conflict resolution.

Materials Needed

* world map
* large sand or water table
* sand, clay, mud, small pieces of vegetation
* large garden watering can
* chart paper and coloured markers

Method

* Review the pattern of basic needs for all people.
* Review the definition of natural catastrophe.
* Identify Bangladesh on the map. Use a relief map to construct the physical features of the country in the sand or water tray.
* Take turns being the natural catastrophe of excess rain and flooding. Ensure the students understand the flooding is salt water.
* List the possible effects of the pattern of basic needs by the introduction of too much of one need. Establish how it may alter the lifestyle of the population. Make a pictorial representation of the alteration in landscape and a written report on the possible effects this change in pattern may have on lifestyle.

Lesson Extension

* Identify how other natural disasters may alter or change patterns in basic needs and the effects it may have on patterns in

nature, environment, arts, scientific research, time. Make a report of the findings.

Additional Possible Projects and Activities

* Modify original fairy tales into a drama, video presentation, puppet show, mime.
* Share original writings or adaptations with another class, school principal, deaf senior citizens group deaf pre-school class.
* Volunteer as a peer counsellor. Utilize the patterns ofconflict resolution and problem solving skills learned in this unit to help a peer develop needed skills.
* Videotape yourself as a story teller or reader. Self critique your skills based on the pattern of enjoyment chart. Practise new skills and re-video.
* Discuss ways various patterns help and assist us in our daily lives. List ways change would occur if the patterns were removed, altered or enforced.
*Additional projects, centers and activities as suggested by the students and/or teachers as the unit unfolds.

Lesson Plans

Lesson plans for this last week are dependent on need and can not be anticipated.

APPENDIX D

Bibliography

Listed below is a partial list of books which could possibly be utilized for a Patterns theme. Students would access further books, kits and videos from the resource area and home, schools or public libraries. The bibliography contains materials to entice and encourage students in selecting areas of interest and background information necessary for the teacher's lesson planning. As the theme unfolds the materials will change and vary according to the needs and interests of the students and teacher. It is not meant as a comprehensive bibliography, but rather an introduction to the possible books, materials, kits and videos available for this theme.

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APPENDIX E

EVALUATION TECHNIQUE EXAMPLES

In both the Whole Language Approach and the Differentiated Curriculum model, evaluation concentrates on self-improvement, with little formal testing or evaluation being done. Following are a list of possible evaluation forms written specifically for the theme "Patterns". Based on the evaluation techniques outlined in Chapter 3, the forms as developed by the writer, would give the teacher and student valuable information about progress being made.

Self-Evaluation

Self-Evaluation Form

Name _____ **Date** _____
Theme _____ **Name of Project**_____

	Yes	No
1. I feel I used my time well	_____	_____
2. I used many resources for information	_____	_____
3. I found information on all my questions	_____	_____

4. Presentation form :___written ___graphs ____pictoral
___models ___drama ____video
___other (specify) _____

5. I enjoyed or did not enjoy working on this project because

---

---

6. Areas I think I did a good job are

---

7. Areas I think I could have improved

---

8. I would like to find out more about

---

9. I feel I did: ____my very best ____almost my very best ____good job.

10. Additional comments

Teacher Self-Evaluation Form

Theme _____

Date_____

	..... Yes	No
1. Goals and objectives were clear and easy to follow	___	___
2. Goals and objectives were realistic	___	___
3. Students showed overall interest in the theme.	___	___
4. Students had the opportunity to develop affective objectives	___	___

5. Activities, centres and projects encompassed the full range of cognitive skills. ___ ___

6. Resources, field trips and guests were effective. ___ ___

7. All students were able to maximize potential ___ ___

Comment if answer is no_____

_____ _____

8. Areas I feel were very effective and well done were_____

_____

_____

9. Areas I feel could have been improved were

_____

_____

_____

10. Additional Comments_____

_____

Peer Evaluation

Critique for_____
By_____
Project_____
Date_____

1.This project helped me learn more about_____
_____
because_____
_____
2. Areas well done in this project
were_____
_____
_____
_____
3. One thing I would change or improve
is_____
_____
_____
4. The part of the project I enjoyed the most
was_____
_____
_____

5. I would like to work on a project with _____
(friend's name)

because_____

6. Additional

comments_____

_____

Checklists

Group Presentation

Participants_____
Project
Title_____
Theme_____ Date_____

	Yes	No
1. All members participated equally in the preparation of the presentation.	___	___
2. All members participated equally in the presentation process.	___	___
3. Presentation was smooth and well rehearsed.	___	___
4. Presenters exhibited understanding of subject matter.	___	___
5. Presentation was attractive and kept the viewers' interest	___	___

Tests

Pre-and Post Math Test

Theme: Patterns

Pre-test

Name_____

Date_____

1. Reads and writes numerals to 100. ___yes ___no

Comments_____

_____

2. Concrete patterns. ___identify ___reproduce ___describe ___extend ___change ___develop new pattern

3. Pictorial patterns. ___identify ___reproduce ___describe ___extend ___change ___develop new pattern

4. Patterns on the 100 peg board. ___identify ___create

5. Odd and even numbers patterns. ___identify ___reproduce

6. 3-D shapes. ___knows characteristics ___identifies

7. 2-D shapes. ___knows characteristics ___identifies

8. Divisions of the day ___recall ___illustrates

9. Days of the week ___recall ___illustrates

10. Months of the year ___recall ___illustrates

11. Yesterday ___recall ___illustrates

12. Today ___recall ___illustrates

Comments_____

_____

_____

Post-test

Date_____

1. Reads and writes numerals to 100. ___yes ___no

Comments_____

_____

2. Concrete patterns. ___identify ___reproduce ___describe
___extend ____change ___develop new pattern

3. Pictorial patterns. ___identify ___reproduce ___describe
___extend ____change ___develop new pattern

4. Patterns on the 100 peg board. ___identify ___create

5. Odd and even numbers patterns. ___identify ___reproduce

6. 3-D shapes. ____knows characteristics ___identifies

7. 2-D shapes. ____knows characteristics ___identifies

8. Divisions of the day ____recall ___illustrates

9. Days of the week ____recall ___illustrates

10. Months of the year ____recall ___illustrates

11. Yesterday ____recall ___illustrates

12. Today ____recall ___illustrates

Comments_____

_____

_____

Rating Scales

Study Attitudes

Name_ _____
Date_____ _____
Rate yourself by circling according to the following:
1 - never 2 - seldom 3 - about half of the time 4 - usually
5 - always

1. I am able to study well in school.	1	2	3	4	5
2. I am able to study well at home.	1	2	3	4	5
3. I budget study time between various subjects	1	2	3	4	5
4. I have a regular study time at home	1	2	3	4	5
5. I hand in my assignments on time.	1	2	3	4	5
6. I am easily distracted when I study in school	1	2	3	4	5
7. I am easily distracted when I study at home.	1	2	3	4	5

Anecdotal Records

Evaluation of Student Growth

Theme: _____

Name_____ **Date**_____

A. Areas of Study (Check all that apply)

_ _Language Arts/Humanities ___Science ___Speech
___Social Studies ___Art ___Mathematics
___Auditory Training ___Health
___Other_____ ___Other_____

Beginning Date_____ Ending Date_____ #of days____

B. Theme Objectives

1._____
2._____
3._____
4._____
5._____

C. Objectives and Accomplishments

Circle the levels for each theme objective. See key below the grid.

Theme Objectives	Cognitive Objectives	Affective Objectives	Attainment of Objectives
1.	1 2 3 4 5 6	A B C	1 2 3 4 5
2.	1 2 3 4 5 6	A B C	1 2 3 4 5
3.	1 2 3 4 5 6	A B C	1 2 3 4 5
4.	1 2 3 4 5 6	A B C	1 2 3 4 5
5.	1 2 3 4 5 6	A B C	1 2 3 4 5

Cognitive Objectives	Affective Objectives	Attainment of Objectives
1. Knowledge	A. Development of interest in topic.	1. Not at all
2. Comprehension	B. Development of personal relationships.	2. A little
3. Application	C. Development of attitudes towards social causes.	3. About half
4. Analysis		4. A great deal
5. Synthesis		5. Completely
6. Evaluation		

D. Activities (Briefly list student's accomplishment)

_____

_____

_____

_____

E. Products (Briefly describe projects, stories, plays, dramas, etc.)

_____

_____

_____

F. Resources Used (Reference books, videos, human resources, etc.)