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THE UNIVERSITY OF ALBERTA

A PSYCHOLOGICAL EXAMINATION OF TEACHING RHYTHM IN PRIMARY GRADES

BY

GLORIA A. ZAHARIA

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

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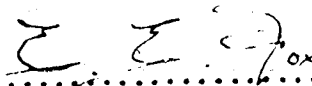
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## DEDICATION

This work is dedicated to the memory of my late mother Mary Holychuk,  
who instilled in me a value for lifelong education,  
and for setting an example of patience, generosity, and love.

## ABSTRACT

This study intended to test the implementation of the Ukrainian Bilingual Music Program and to determine whether or not a psychological basis exists for the stated objectives of the Alberta Music Curriculum. The focus of the curriculum appears to be on fixed end-states rather than on the learning processes of children.

The theories of Heinz Werner, Jerome Bruner and Lev Vygotsky were used to develop a set of teaching strategies which may enhance concept and skill development in children. The focus of teaching would involve ongoing evaluation of dynamic variables, would try to accommodate individual differences or levels of concept attainment. The end-product would be a creative act rather than achievement on a standardized test.

The study was carried out in six classrooms at three schools. Two classes at each of the first three grades participated. All students were given a pre-test and post-test of the rhythm concepts being studied to ascertain their mastery of same. Five students from each class were also tested individually for performance and mastery. Between the tests, two sets of observations were carried out in the classrooms to evaluate children's performance and production during music classes. The students were rated on five variables: body position, tool use,

process duration, process-product dynamic, and multiple events continuum. The rating scale resembles Bruner's enactive, iconic and symbolic levels of processing. Following student observations and testing, the teachers were interviewed to elicit information about how they use the prepared music program, about the problems they experience, and to get an impression of their personal philosophies of music education.

It was assumed that the classes which showed the best concept attainment on the tests would also show the highest level of processing during the observation. This occurred in only one grade where one class showed a high level of processing during the observed classes. Reasons for discrepancy at the other two grade levels were suggested.

Suggestions for improving the study are given along with suggestions for using developmental and learning theory in curriculum planning and evaluation.



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CHAPTER I  
INTRODUCTION

The Alberta Education Curriculum Guide for Elementary Music (1977) is an outline of the music concepts and skills appropriate for grades one to six. The music concepts to be acquired are under the headings: Rhythm, Melody, Harmony, Form, Expression, and Related Arts. In each concept category, children are developing skills of listening, moving, singing, playing instruments, reading and creating. The program is developed sequentially and allows for some flexibility within each concept category and within grade levels. The skills and concepts are not isolated and taught separately, but are integrated into a total musical experience for children.

The general objectives of the music program are:

- to help children develop an awareness and sensitivity to the aesthetic aspects of music in our culture,
- to provide frequent opportunities for children to discover and to experiment with music in all its forms,
- to help children develop their own creative powers through music,
- to help children acquire musical skills and to provide opportunities for children to use these skills.

(Curriculum Guide for Elementary Music - Alberta Education 1977)

### Description of Program Being Studied

A program of music was developed for the Ukrainian Bilingual classes in Alberta, since textbooks for teaching music in the Ukrainian language are not readily available. The Ukrainian Bilingual Music Program (interim edition), a curriculum guide, was prepared by Alberta Education to give classroom teachers in the bilingual program assistance in meeting the provincial music objectives. The curriculum guide approaches the concepts sequentially, using a variety of suggested teaching strategies to stimulate skill acquisition alongside conceptual development. The strategies are written from a behavioural perspective. They outline the activities and skills that children will experience in learning a musical concept. Because these activities are listed sequentially and the conceptual hierarchy follows that of the Alberta Curriculum Guide for Elementary Music (1977), this music program was chosen as the subject of a psychological analysis, culminating in a field study to determine the extent and success of its implementation.

### The Problem

The problem with many curriculum guides, and the Alberta Music Curriculum is no exception, is that the focus is on the end product rather than upon the dialectics in the changes in the child. The learning process is often ignored in favor of program objectives. Such curriculum demands make it difficult for teachers to accommodate individual differences among students and

other interpersonal processes going on in the classroom. It has been difficult to uncover a truly psychological basis for the planning and development of the Alberta Music Curriculum. A comparative study of music curricula from other provinces reveals a similar weakness (British Columbia, Department of Education, 1971; Government of Newfoundland and Labrador, Department of Education, 1982; Manitoba Department of Education, 1978; Nova Scotia, Department of Education, Halifax, 1980; Ontario Ministry of Education, 1978; Saskatchewan Education, January, 1981.).

#### The Study Plan

An attempt is made in this thesis, to test a psychological framework for the teaching of music in elementary grades. The theories of Heinz Werner (1963), Jerome Bruner (1973), and Lev Vygotsky (1978) are synthesized into an overall pattern which, if followed, may enhance concept and skill development in children, and allow for ongoing evaluation by the teacher. These theories should ensure that children's learning is guided through all the necessary steps for concept development to occur. The curriculum design will be applied to three different rhythm concepts - one from each of grades one, two, and three. Suggested teaching strategies will follow a sequence emphasizing discovery learning, adult and/or peer guidance gradually diminishing until independence is achieved, and include evaluative techniques which would help the teacher determine if children have learned concepts or acquired certain skills. When children are able to perform music activi-

ties independently and use their knowledge creatively, then they are ready for the challenge of new learning situations.

A psychologically sound basis for the sequence of learning situations is necessary if children are to experience enjoyment and success throughout a year's work. Each new learning must take into account the social-cultural factors inherent in the children and the classroom setting. Such learning must allow for variations in the personality dynamics between teachers and students. For this reason, a paradigm stressing method, sequence, activity and dynamic variables is more suitable for teachers than a curriculum guide dealing only in measurable end-states. Hence the need for this study.

#### Definition of Terms

The Children - The randomly selected members of the classrooms (Subjects) in which the study was conducted who were either tested or whose behaviour was observed for the purpose of this study.

Curriculum - A fixed or required series of studies in a particular subject.

Observers - Two individuals who observed the behaviour of randomly selected subjects and scored the behaviour on a four-point scale on five differ-



ent behaviour categories.

Paradigm - A model intended to predict or explain Behaviour patterns.

Psychological Study - The study of transitive inferences, thought and feeling - processes which interact when behaviour is modified.

Tester - The individual who administered tests of musical knowledge and skill, in this case, one of the developers of the curriculum being studied.

Theory - A formulation of apparent relationships or underlying principles of certain observed phenomena which has been verified and from which behaviour can be predicted.

The principal aim of the study is to show that developmental theory can be used to enhance curriculum development and implementation. Theories must be selected which describe concept or skill acquisition in the child. The theories must have observable and/or testable consequences that are consistent with curriculum objectives and with the children's development and classroom activities.

## CHAPTER II

### A REVIEW OF CURRICULUM DEVELOPMENT, MUSIC EDUCATION AND PSYCHOLOGICAL IMPLICATIONS

Curriculum thinking and development have, in recent years undergone close scrutiny and critique, in an attempt to find not only their shortcomings and failings, but also to seek new goals and improved methods of instruction.

#### A. Music Education

##### 1. Early Philosophy

The basis of curriculum theory is philosophy (Kabalevsky, 1979; Mark, 1982; Rideout, 1982; Taba, 1962; Tanner, 1980; Van Manen, 1981; Werner, 1979; and others). From the earliest times, education philosophers have advocated the study of the arts, and of music in particular.

Philosophers, like Plato, Aristotle and Boethius expounded on the educational importance of music and all the arts. They believed that music was necessary to maintain traditional cultural values; to develop the ideal citizen; to develop the individual; and to strengthen his relationship with society. It should be taught because it is liberal and noble (Mark, 1982).

During the European Middle Ages, the purpose of music in the schools was to serve as a furtherance of religious education. This thought was upheld throughout the Protestant Revolution. In Europe, as elsewhere, music continued to serve as one of the elements of a happy, peaceful family life. It was the method by which one would develop an understanding of the universe and the human's place in it, and more than any of the arts, it has been a means of ministering to human welfare.

In the New World, music held an important place in social living and religious worship, but not in schools. According to Mark (1982), it began to appear as a school subject in the mid 1800's. G. Stanley Hall's early psychological theories recognized music as a "primal element in evolutionary history... an essential factor in the healthy development and training of mankind's emotions today" (Hall, 1911, p.93).

In Hall's curriculum, elementary school children studied rote singing for the purposes of enjoyment and pleasure, and for instruction in moral and social values. He pleaded for a more extensive music culture to be taught in schools in order for children to have normal, positive, emotional lives, spiritual depth, patriotic and religious feelings, and idealized affect-

ions (Rideout, 1982).

## 2. Current Goals

The aims of music education are now centered around the power of the aesthetic, and the experience of music. The major goal of the Silver Burdett Music program is, for example, "to increase the sensitivity of all children to the power of music as an art - to develop their abilities to perceive the art of music keenly and respond to it deeply. Nonartistic values - the social, psychological, physical, and other benefits of involvement in music - are recognized and included, but they are treated as adjuncts to the main purpose" (Silver Burdett Music, 1974, p vi). The aesthetic experience consists of both perceiving and responding to the expressive qualities in musical selections.

The experiences of producing, conceptualizing, analyzing, and evaluating result in the acquisition of musical skills and growth of creative powers. The effective development of music skills, and the opportunity for children to frequently demonstrate them, will hopefully lead to valuing music and the arts as important, fulfilling aspects of their world (Alberta Education, 1977; Silver Burdett Music, 1974).

## B. Curriculum Development

### 1. John Dewey

Dewey was one of the most influential proponents of the idea of education as a social process, (and "as the primary and most effective instrument of social reconstruction ..." (Taba, 1962, p. 23). His ideas about education continue to influence the direction that curriculum development takes today (Mark, 1982; Taba, 1962; Tanner, 1980).

In 1902, Dewey advocated that, in education, interaction between 1) the learner, 2) society, and 3) organized subject matter be encouraged rather than being treated in their separateness as antagonistic to one another. He criticized the educator's tendency to separate the psychological process of learning and skill acquisition from the social conditions and from the developmental characteristics of the learner, him/herself (Tanner, 1980). This was an attempt to withdraw curriculum development from the roots of thought underlying scientific methodology, and return it to the realm of humanity. Dewey felt that the education process in general - formal and informal - has two sides - psychological and sociological and "...neither can be subordinated to the other, or neglected without evil consequences... knowledge of social conditions of the pre-

sent state of civilization is necessary in order to properly interpret the child's powers" (Dewey, 1929, quoted in Taba, 1962, p. 23).

Dewey's philosophy intended "to make for a better future society" (quoted in Tanner, 1980, p. 147).

The implications of Dewey's philosophy for music education are stated in the introduction of the Progressive Music Series (1916, p. 9).

The general aim of education is to train the child to become a capable, useful, and contented member of society. The development of a fine character and of the desire to be of service to humanity are results that lie uppermost in the minds of the leaders of educational thought. Every school subject is valued in proportion to its contribution to these desirable ends. Music, because of its powerful influence upon the very innermost recesses of our subjective life, because of its wonderfully stimulating effect upon our physical, mental, and spiritual nature, and because of its well nigh universality of appeal, contributes directly to both of the fundamental purposes of education. By many of the advanced educators of the present day, therefore, music, next to the "three R's" is considered the most important subject in the public school curriculum (from Mark, 1982, p. 17).

The history and philosophy supporting music education has been considered. Now recent trends and issues in curriculum development will be dealt with.

## 2. Practical Approaches

### a. Stages for the organization of subject matter.

A more pragmatic approach to curriculum development began in 1949 when Ralph Tyler formulated a curriculum "Rationale" - a four-stage ends-means schema, which remains the underlying plan for many current curriculum development projects.

The four stages are:

1. identify the objectives or purposes,
2. select the means for attainment of these (learning experiences),
3. organize these means or experiences,
4. evaluate the outcome or achievement in terms of the purposes stated (Aoki, 1978; Tanner, 1980).

This process could apply to any subject material. However, we recognize in the four-stage system, the omission of any mention of children or their psychology, or of society and sociology, or of subject matter and content. It fails to allow any interdependence upon other factors in the teaching-learning situation. The consideration of psychological or sociological differences did not enter the process of curriculum development. Tyler (1942) did, however, list outcomes which should result if the four steps of curriculum planning in-

cluded a wide enough scope of behaviours to meet children's psychological needs (whatever they may be). These educational outcomes included the acquisition of important information, ideas, and principles; the development of effective ways of thinking, work-habits, skills, sensitivity to social problems, appreciation of literature, art, and music through a variety of aesthetic experiences; improved physical health, personal-social adjustment; and the development of a wide range of worthwhile interests (Smith and Tyler, 1942).

Taba (1962) extended Tyler's (1949) Rationale to include subject matter (content) and assessment of the needs (individual; societal) to be fulfilled by the curriculum. Taba also advocated ongoing evaluation which would check the ends and means against the initial goals of the curriculum, and which tried to allow for individual differences among learners by recommending variation and alternation of learning experiences. Taba's seven steps (Taba, 1962, p. 12; Tanner, 1980, p. 84) are:

1. Diagnosis of needs
2. Formulation of objectives
3. Selection of content



4. Organization of content
5. Selection of learning experiences
6. Organization of learning experiences
7. Determination of what to evaluate and of the ways and means of doing it

Taba (1962) also argued for more attention to the conceptual framework of curriculum design.

...the lack of relationship among objectives, the content outline, and the evaluation program has often been noted. Objectives tend to be more ambitious than the provisions for learning warrant (see Taba's seven steps). Evidently, the conceptual framework of the newer curriculum designs does not adequately provide the move from objectives to content or the instructional pattern and from both to the methods and the manner of evaluation (1962, p. 417).

With modesty this study tries to fill this void.

b. Sequence in the learning process

Taba (1962) attempted to extend Tyler's (1949) main criteria of "continuity, sequence, and integration" of subject matter to incorporate the notions of successive formation of ideas and the development of cognitive processes. She stressed a sequential order of complexity and abstractness of ideas, and precision in analysis and application. With the proper sequence of facts and basic ideas

being taught, there would be no need to reteach or correct previously learned information, at a later stage. This coincides with Bruner's (1960, p. 13, 52) notion of a "spiral curriculum". Bruner reasoned that the basic ideas that lie at the heart of any discipline, forming its structure, should be developed with the young child and dealt with in progressively more complex form as the child advances. The ideas become deeper and wider as they are developed in spiral fashion through each grade level.

Taba (1962) favored the development of common perceptions and ideas which cut across the different fields of study. This would promote a cosmopolitan rather than an ethnocentric orientation. It prepares the learner for dealing with the social and cultural realities of the time and of the future.

If education is to serve an unpredictable future, it is especially important to cultivate the type of mental processes which strengthen the capacity to transfer knowledge to new situations, the creative approaches to problem-solving and the methods of discovery and inventiveness (1962, p. 275).

Bruner, himself, in "The Process of Education Revisited" (1971) reevaluated his former views on curriculum and declared a moratorium, or at least a

de-emphasis on matters having to do with the structure of subject matter and a new focus on vocation or way of life problems that are transmitted and nurtured in the school system. The desired result is a need for the schools to help create a culture, a society, and a technology that not only help to feed people, but keep them caring and belonging. Bruner's revolution centered around giving all learners a sense of intent, initiative, and a sense of potency - especially to the underprivileged and alienated children.

Taba's (1962) instructional plan recommended that teachers give all individuals an equal opportunity to learn by presenting them with a variety of activities: "reading, doing research, writing, experimenting, observing, analyzing, manipulating and constructing" (p. 308). The idea was that different children have different modes of learning and that the world of experience could provide the most fundamental kind of learning.

This move toward the recognition of individual differences was part of the 1960's trend in education which reflected to some extent, an awareness of psychological factors. Notions of need,

child development, maturation, learning theory, cognitive growth began to enter the vocabulary of curriculum planners and education. So the need for a "psychological basis" of curriculum theorizing, and related testable ways of assessing consequences seems to be required.

### C. The Need for Psychological Theory in Curriculum

#### 1. Development Theory: The Cognitive View

The recent focus on intrapersonal processes can, in some measure, be attributed to the work of Jean Piaget. He gave to educational psychology the "science" of education. Jean Piaget's attempts at integrating a neo-Kantian conceptualization of the nature of ontogenesis led to at least two important conclusions for educators. The first is that there are significant qualitative differences between the cognitive processes of the child and the adult. Second, Piaget's stage theory contributed to the understanding that each stage in development is a necessary condition for the occurrence of subsequent success at the next stage. His studies of children on conservation tasks, perceptual decentration, egocentrism and so forth have been vital for the understanding of these processes and their consequences.

Although Bruner (1973) and Donaldson (1978) questioned both the conceptual base and the methodology used by Piaget, they nonetheless concurred that children's simple learning of verbal terms does not, at least in the short run affect basic cognitive processes, such as conservation. The child rather constructs these processes out of a more generalized action.

Langer (1969) cited support for Piaget's general hypothesis that intelligence is the only truly autonomous self-generative system of action and that other systems, like language, mental imagery, memory and perception are subordinate to intelligence. These latter systems depend on maturation, experience, and social communication. Despite this influence of Piaget, many education theorists have kept their concerns narrowed to the problems of teaching methodology (Tanner, 1980, p. 436).

Langer (1969) suggested that there were two major tasks for developmentalists to face in order for a developmental psychology theory to be descriptively comprehensive and have explanatory power. First, they must specify the most advanced (end-state) level of development and describe its formal determinants. Second, if the direction of development is to be determined, they must specify the generative rules that

must be built into the organization of the functional structures of the initial stage. The resolution of both tasks, generation of rules and the description of end-states, requires that the logical structures of each functional stage reasonably imply without actually containing the structures of the next stage. A third requirement is that they must build into these mechanisms of structure, formulations of logical transfer, formulations of teaching and learning. In other words, they must include action and motion (Baltes, 1984).

## 2. Bruner: Spiral Curriculum

If one were to accept Langer's criteria for a comprehensive developmental theory and apply these to a curriculum theory or plan, then it would appear that Bruner's (1960) "spiral curriculum" theory can be made to fit this developmental paradigm though its fundamentals were certainly not developmental. By being non-developmental, the spiral follows a linear model of increasing magnitude. In addition, it fails to account for variation. Each time a certain aspect of curriculum is revisited, in spiral fashion, the preceding learning has established the necessary conditions for further constructs and concepts to be created, and the spiral to be continued. This also creates an argument for individualization in sequence, in that, if the preceding

stage is not functionally mastered, then the pre-requisites for the subsequent stage are not present and further learning cannot occur. Skipping stages in the spiral is rarely considered.

Bruner's concept of spiral curriculum has been widely accepted in the fields of mathematics, science, language arts, as well as music and many other subjects. For example, the major elements of mathematics - numeration (number theory), operations, properties, geometry, problem-solving and measurement, are all dealt with at the earliest grades and revisited in more challenging and complex forms in each subsequent grade level.

This continuation must proceed smoothly so that as ideas grow and change, they expand both in the direction of greater complexity as well as in the direction of greater generality. Bruner's statement of faith will be examined when some of Heinz Werner's thoughts and writings are examined later in the thesis.

In music education the spiral curriculum unfolds as the children progress from simple nursery rhymes and folk songs to more sophisticated music production. They continuously and constantly build upon their skill and

knowledge in each of the musical elements of rhythm, melody, harmony, form, expression and appreciation. As children grow to understand and perform more complex musical concepts, their understanding of the general elements also increases.

It is important to note, however, that the spiral curriculum is not a developmental construct, in that development is probably more than the continuous growth, increasing in scope and rising higher and broader at every step, that the spiral implies. The sequences of increasing complexity are a function of activity, of what does and does not happen at the moment that leads to necessarily and sufficiently greater complexity and simplicity in time.

Another of Bruner's (1960, p. 73) contributions to the field of education is the concept of "discovery learning". Giving students a sense of discovery, allowing them to learn by doing something themselves is the laboratory or the experimental method of learning. This method should help the child develop "an interest in what he/she is learning, and with it an appropriate set of attitudes and values about intellectual activity generally" (Bruner, 1960, p. 73). Though there is some merit in the claims, Bruner (1971) later pointed out that



discovery is basically a "formula of faith" in which the students' motivation and the development of middle-class skills is very much taken for granted. It is assumed that the desire to learn, and analytic skills are inherent in each child. The need for other perspectives became evident. Bruner's ideas will be considered, though perhaps not applied in entirety.

### 3. The Orthogenetic Principle in Development

To find out more about how learning occurs at each level on the spiral, a look at Heinz Werner's theory gives some insights into the processes which occur. Werner's (1963) orthogenetic principle implies that, as children learn, they go from a state of relative globality and lack of differentiation to a state of increasing globalization, differentiation, articulation and hierarchic integration. That change is an emerging referent of varying skills achieving refinement as the child grows. Curriculum developers writing programs in spiral curriculum format must keep in mind the cognitive processes involved.

### 4. Vygotsky: Zone of Proximal Development

The sociological and interpersonal aspects of learning have not yet been considered. Lev Vygotsky emphasized these in his description of how children

learn. Vygotsky (1978) added another dimension to our common conception of learning by pointing out the contribution of speech to the development of new structural organization in the minds of children. He showed how children use speech - external or internal - as well as their hands and eyes to solve practical tasks. Vygotsky's notion of a zone of proximal development, while it deals with a child's learning, has great implications for teaching methods. Vygotsky (1978) states that good learning occurs in advance of development. The behaviour resulting from interactions with adults or peers, that is led by the other persons becomes an indicator of the child's potential level of development. This shows where a child will eventually be able to function independently.

According to Vygotsky, the cooperative activities planned by teachers should be geared toward new levels of achievement, and must be determined by each child's level of potential or proximal development. This implies that a teacher must be aware of each student's level of functioning, and become aware, through guiding activities, of the student's level of potential functioning and learning as a function of adult or peer assistance. This is probably a better measure of capability than curriculum based on the use of standard-

ized tests. Standardized tests, by focusing on fixed and static abilities, tend to obscure dynamic and transitive processes.

By using the theories of Werner, Bruner, and Vygotsky, it may be possible to synthesize a theory of curriculum which describes the functional structures as well as the cognitive and social processes involved in the teaching-learning situation.

#### D. Psychology in Curriculum

Tanner (1980), in looking at the impact of psychology on the curriculum field, pointed out that even psychologists themselves do not agree on which theory of learning to adopt. The psychological outlook has attracted a number of followers from academic circles. The result is an emphasis on measurable skills, and a focus in curriculum on problems of method. The underlying assumption is that there is an agreed-upon body of knowledge called curriculum, and educators must find the correct methods of helping children learn.

Tanner (1980) also talks about developmental psychology, which, like other psychologies, can offer only partial insights into educational problems. He states that hierarchical stage theories in child development should be recognized as an attempt to explain the course of human de-

velopment from infancy to adulthood, rather than as curriculum theories in themselves. He notes that one of the greatest problems with curriculum development today is the lack of controlled research, and the reliance upon testimonials and unsubstantiated claims in curriculum evaluation (p. 549).

Contemporary curriculum researchers, evaluators and critics (Aoki, 1979, 1981; Schmidt, 1981; Tanner, 1980; Van Manen, 1981) propose an attitude which regards the child as a social, cultural, and historical being. In the process of cognitive growth there is social interplay, communication, and languaging to consider as well as, with actions, the manipulation of objects. To have effective learning going on, curriculum planners and educators must take into account factors in history, sociology, and psychology. However, even this broad scope may not be a sufficient answer to some of the problems in education today (Aoki, 1981).

If the aesthetic goal of music education is to express beauty and harmony in all things, the use of a good model - whether live or recorded, is of utmost importance.

Hair (1981, p. 11) noted that "most of the current elementary methods classes and music textbook series base their curricula on a conceptual approach to music. Emphasis is placed on providing students with a variety of music activi-

ties, which will give them an experimental basis to form and label concepts according to traditional music terminology. Yet, the use of traditional terminology for concepts in studies with young children continues to present problems. Children do perceive differences and changes in music stimuli long before they are able to label these changes appropriately."

Wooderson (1981 p. 39) recommended that "a task hierarchy for the identification of and discrimination between musical instruments that are common to elementary students' music experiences' be researched, and made available so that "instruction (can) be planned with developmental levels and general entry behaviours in mind." There seem to be a great number of research projects providing both questions and answers. The failing seems to be that curriculum planners and developers do not take the information available from these research orientations into consideration when planning new programs or when communicating with the teachers about these programs.

#### E. Future Curriculum Planning

In evaluating and revising an existing program, and in developing a new curriculum, it will be necessary to take into account the past directions of curriculum theory, current research information, and relevant stands in psychology.

The next chapter builds an argument for the application of three psychological theories toward accounting for more effective procedures in the teaching and learning process. The theories of Heinz Werner, Jerome Bruner, and Lev Vygotsky will be used heuristically to evaluate an existing curriculum. The consequences of that analysis will be subsequently evaluated.

## CHAPTER III

### AN ANALYSIS OF THREE RHYTHM CONCEPTS, FROM THREE GRADES, ACCORDING TO THE THREE THEORIES

Three rhythm concepts, one each from grades one, two and three of the Ukrainian Bilingual Music Program (interim edition, January, 1980, Alberta Education) will be described and then analyzed according to the developmental theories of Heinz Werner (1956, 1963), Jerome Bruner (1973), and Lev Vygotsky (1978). The result of this analysis will lead toward a curriculum model based on vital psychological insights - one which should have a more predictive heuristic value than that which currently exists.

#### The Curriculum Guide

Inspirational theory commands this guide, with no formal considerations for the way children learn and develop. In the curriculum guide for Ukrainian music, the first rhythm concept taught in grade one is: Music may move to a steady beat. Following the song list is a series of suggested activities/teaching strategies. They are:

- a. Children march to the steady beat of songs.
- b. Children patsch and clap to the steady beat of songs.
- c. Children patsch and clap patterns to the steady beat of songs:

e.g. Clap

The diagram consists of two parts. The left part shows a 'Clap' pattern on a horizontal line with four vertical stems at positions 1, 2, 3, and 4. Black ovals are placed on the line at positions 2, 3, and 4. Below the line are the numbers 1, 2, 3, and 4. The right part shows a 'Patsch' pattern on a horizontal line with four vertical stems at positions 1, 2, 3, and 4. Black ovals are placed on the line at positions 1 and 3. Below the line are the numbers 1, 2, 3, and 4.

Patsch





- iii. children clap the steady beat while reciting the words.
- iv. children learn to play and say the rhythm of the following ostinato.



- v. children clap the rhythm four times.
- vi. children practise clapping the rhythm of the ostinato against (while singing) the third line of the song.
- vii. children practise clapping the ostinato against the whole song as sung by the teacher.
- viii. children perform the song with ostinato accompaniment.

Specific instructions are given for individual songs and poems. Further activities include:

- c. Echo-clap rhythm patterns.
- d. Perform rhythmic question and answers.

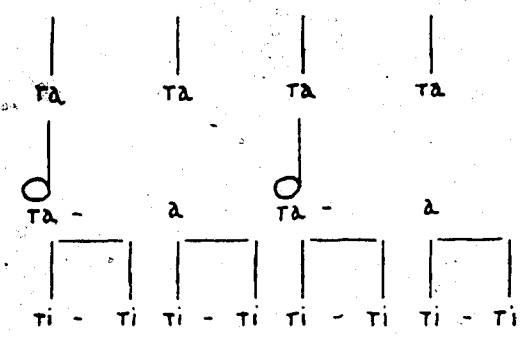
(Translated from Ukrainian Bilingual Music Program, interim edition, January, 1980).

The first rhythm concept in grade three is: Sounds and silences

have duration which is relatively long or short (whole, half, quarter, eighth notes and rests).

Following a list of songs and a list of note and rest durations are the following strategies:

- a. Echo-clap a wide variety of rhythm patterns using many different notes and rests (examples are given).
- b. Create various word phrases to fit four-beat rhythm patterns (read some examples, children create own examples).
- c. March or move to certain note durations during a song. (examples such as the following are given).



- d. Children create unusual ways of moving to given rhythms.
- e. Echo-clap 2-measure rhythm patterns in 4/4 and 3/4 (examples are given).
- f. Children select and learn to play one of the above-mentioned 2-measure rhythm patterns as an "ostinato" to songs in the same time signature.

- g. Optional: Use 2 measure rhythm patterns created by the children to play a rhythm rondo (A-B-A-C-A-D-A . . .).
- h. i. Children learn to play a 3-part rhythm accompaniment for a Ukrainian folk song. (Score is included)
- ii. Score is given for another 3-part rhythm ensemble as accompaniment for a Ukrainian folk song.
- iii. A 3-part rhythm score is given for "Andante" from Haydn's "Surprise Symphony".

(Translated from Ukrainian Bilingual Music Program, interim edition, January, 1980).

#### Werner: Organismic - Development Approach

Heinz Werner's orthogentic principle states that whenever development occurs, it proceeds "from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation and hierarchic integration" (Werner, 1956 p. 126). The organism moves from a state of "minimal organization or structure and moves toward a better organized structure" (Gardner, 1978, p. 250). The process is both organismic, dealing with symbolic activity and psychosocial functions, and developmental in that the manifestations of symbolic activity occur through directed change in organization over time. A full understanding of the end-state is necessary

in order to understand the order and significance of the steps in the developmental progression. The interactionist viewpoint stresses both genetic/maturation factors, and environmental factors - including social, cultural and experiential ones. Progress implies both continuity - with the increase in differentiation and hierarchic integration, and discontinuity - when new structures and functions emerge in the process (Werner, 1963).

Werner sees symbol formation as an instrument necessary for the representation and internalization of sensory-motor activity. The order of the responses to stimuli in the environment proceeds as follows:

- I. Physiochemical stimuli resulting in stereotyped, reflexive action.
- II. Species-specific and learned or habitual responses made to signals or signs.
- III. Symbol formation as a means of knowing and contemplating about the environment.

This orthogenetic principle emphasizes a move to increasing differentiation and systemization of symbolic forms. Verbal symbols help a growing child to differentiate and articulate environmental states and referents. These symbols

develop with a gradual distancing between the symbol and the referent, via dynamic schematization in which internalization of sensory - motor activities and symbol-formation comes about. "Ta" is one such verbal referent for a musical beat. After much experience clapping, tapping, snapping, playing the beat of music while evoking "ta, ta, ta, ta," the child eventually feels and understands beats without needing the vocal or verbal symbol. In other words "the beat" has become functionally symbolized and integrated in the general functioning of the child.

Werner uses the idea of distancing, or polarization, in which, as the child matures in his/her social relations, she/he simultaneously becomes more separate and yet together in his/her independence, whereas learning that once occurred only through parents, now becomes the consequence of others. Later on, teachers and other adults can participate in his/her learning about the world, and finally the child is able to learn continually in all situations. The process of symbol development becomes complex and abstract, and the images (symbolic vehicles) become increasingly conventional and communal. "In brief, with development, the meaning or connotative schema of the referent becomes less bound to a concrete external form and eventuates in an invariant inner structure distinct from the ever-varying appearances which an object presents to perception" (Werner and Kaplan, 1963, p. 48). For example, the beat in music eventually becomes an internalized schema that is no longer bound

solely to the activity of tapping or playing it on an instrument. It may even exist apart from an actual piece of music being heard or performed.

What Werner's theory brings to the analysis of the music curriculum is the notion that in each learning experience, a certain maturity level must be present, and that a knowledge about the objective (end state) of each must shape the sequence of activities the child is led through. Internalization must occur when simple experiences from one meaningful understanding or schematization to another are transferred and music is a likely means to semiotic generalization in this exchange. In music classes then, Werner would approve of the general sequence followed in the lessons, in which physical activities and music experiences are followed by attempts to depict these experiences in various ways. In addition, the presentation of accepted musical notation for reading and writing involves hierarchically graduated tasks which challenge and nurture the changes into being.

The gradual increase of complexity inherent in a spiral curriculum concurs with Werner's notions. It progresses to a greater differentiation and hierarchic organization of the subject matter. For example, children progress from experiences with steady beat, to experiences with simple rhythm patterns used in melody and in harmony, to the understanding of and ability to work in novel ways with complex groupings of notes and rests of varying

duration. While this progression toward greater differentiation and complexity goes on, a better understanding of the most global concepts of beat and rhythm also develops. As a result, the differentiation of ideas, feelings, and ways of acting increases, and a more general and global understanding is reached. An example would be where a child who can tap the beat to a piece of music, then learns to tap a more complex rhythm, and later can tap the complex pattern while playing the music, then can demonstrate by action, his/her understanding of the difference between beat and rhythm.

In the music curriculum care must be taken to allow the intermediate step to occur. That is, when children try to develop an understanding and work through their own schematization process before learning standard notation or symbolic representation.

The Ukrainian Bilingual Music Program will be analyzed to discover the processes of differentiation and hierarchization.

#### Music Concepts: Grades One, Two and Three

The gradual move toward greater differentiation and complexity of cognitive percepts is best seen when analyzing the music program through the three grades rather than from activity to activity within each lesson. In grade one, children perform many activities (actions which represent understanding and conceptualizing from what they perceive in the music) where they

respond to the steady-beat in a variety of familiar and unfamiliar selections. They also read very simple rhythms, most of which correspond to this steady beat. In grade two, children continue to respond to the steady beat, but also learn to respond physically in other ways, ie. to read, write and create more complex rhythms. By grade three, children begin to work with rhythms less tied to the steady beat and become aware that beat and rhythm are two different musical elements. This demonstrates an increasingly hierarchical understanding and greater differentiation in conceptualizing and reacting to music, as children progress from grade one to grade three in the music program.

#### The Discovery Method: Bruner

A proponent of the spiral curriculum, Bruner submits the hypothesis that "any subject can be taught effectively in some intellectually honest form to any child at any age of development" (Bruner, 1973, p. 413). Hence, the child is provided with challenging opportunities to discover important general principles by organizing the experiences and manipulating variables. The teacher's role is to help the child in this process. The teacher must also foster an attitude of competency, whereby the child does not depend on extrinsic rewards but enjoys the sheer pleasure of achievement.

The child begins with an acquired frame of reference - a



way of understanding his/her experience and his/her environment. The child is given a minimal amount of information in a learning episode. His/her acquisition of new information is based on manipulations with concrete materials, and his/her own constructions. The original frame of reference is transformed by the new information, and the new information may itself be transformed as further discovery takes place. The child is encouraged to represent experiences in the form of images. This internalization process enables the child to organize and personalize his/her knowledge. With the help of an image and a symbolic notation, the child can grasp formal or abstract properties (Bruner, 1973). This increased understanding leads according to Bruner, to a zest for learning.

General concepts about music can be discovered in much the same way. Bruner emphasized the need for mastery of basic skills, intrinsic reward systems, imaging development, use of symbolic operations to depict knowledge. He recommended that evaluation occur during curriculum development to aid in choice of material, approaches used, and arrangement of setting learning tasks. He allowed for experience leading to discovery, imaging notation and finally, understanding. In music, experience can lead to discovery of basic concepts as well as skill development. Music notation is a symbolic representation of aural experiences and physical performance of music. Usually the three experiences of reading, singing (or chanting) and physical activity occur

simultaneously during this learning process.

The Ukrainian Bilingual Music Program will be analyzed according to Bruner's discovery method, and changes and additions will be recommended where possible.

#### Grade One - Concept 1: Music May Move to a Steady Beat

The curriculum guide suggests a variety of physical experiences in which children will feel the steady beat in music, enacting it by marching, patting (patting ones knees), clapping, snapping fingers and playing rhythm instruments. All of these conform to the steady beat of the music being listened to. It is then suggested that children learn to notate the steady beat as follows: | | | | , and finally, to point to such a notation saying "ta" for each beat.

The suggested sequence of activities follows Bruner's plan fairly closely, however, two possible suggestions for improvement are: 1. emphasize to teachers the role of discovery, whereby before children are told about the steady beat, they are allowed to find "something" in the music to march, clap, or play to, and , 2. give children the opportunity to think of ways to depict steady beat before showing the standard notation | | | | . Teachers should be encouraged to conduct ongoing evaluation and to give constant assistance, so that after a number of musical experiences, the children and the teacher will



Following Bruner's heuristic, the creation, notation, and use of ostinato patterns should proceed as a discovery activity. Instead of giving the class a pattern and having them learn to play it as an ostinato accompaniment, the teacher should merely suggest the children try to play their created rhythm pattern while a song or poem is performed. Then the label "ostinati" can be taught as the description of what the children have already experienced. Further practice with ostinati can add to the variety of the children's experiences with music. This process acts as a self-motivating reward and perhaps encourages further activity.

Grade Three - Concept 13: Sounds and Silences Have Duration Which is Relatively Long or Short (whole, half, quarter, eighth note and rests)

In this first rhythm concept taught in grade three, children experience a wide variety of rhythmic activities - marching, clapping, playing instruments, creative movements. Some of these are based on listening, others on reading.

Children use their previous foundation of rhythm knowledge - saying rhythm syllables while performing the rhythms, reading the rhythmic notation, recognizing their movement to notes of varying duration, performing rhythm ensembles with two, three and four parts simultaneously. And, finally, they create rhythm accompaniments for familiar songs.

Following Bruner's plan the activities of this unit do not immediately conform. However, the activities suggested are ones that nonetheless can aid skill development. If put in the right perspective, children can be led to discover the relationships between the duration of notes and rests, and their labels. Discovery procedures could emerge through activities such as echo-clapping, when children first echo a rhythm clapped by the teacher and can also verbalize the appropriate rhythm syllables. After much practice, the teacher would omit vocalizing the rhythm syllables while clapping a rhythm pattern, but expect the children to recognize and categorize the duration of the notes in the rhythm and be able to evoke their rhythm names spontaneously. In the third step, the children would hear the rhythm pattern clapped by the teacher, categorize the duration of notes and rests, and notate the pattern in writing. The final step once again includes a creating activity during which the teacher may evaluate the children's understanding and proficiency with the duration of notes and rests. Children create, perform, and perhaps notate rhythm patterns using notes and rests of various duration. They may use these patterns in a variety of ways - as ostinati, as bases of melodic creation, as instrumental pieces. Creating is also a way of building into the curriculum a means by which the child's activity is self-gratifying.

#### Vygotsky: The Conceptual Approach

One of Vygotsky's main theses emphasizes the developmental

separation of speech from the child's general semiotic system. The progressive separation of thought and speech implies that the two processes are different, with different functions and consequences. To him "speech and action [initially] are part of one and the same complex psychological function, directed toward the solution of the problem at hand" (Vygotsky, 1978, p. 25). The independent use of speech gains importance as the complexity of the task increases. Speech allows the child a broader range of activity than that which is possible physically, by producing an internalization of the visual field. The visual field is to be included in the planning of action and in the solving of problems.

At first, speech accompanies the child's actions, and gradually moves forward until it precedes action and becomes a planning function. "The system of signs restructures the whole psychological process and enables the child to master her movement" (Vygotsky, 1978, p. 35). The new functions, intentions and symbolic representation permit a new structure of behaviour to occur, in which the focus shifts from the outcome, to the nature of the solution. These higher psychological functions are sociogenetic in origin.

One of the greatest contributions Vygotsky has made to the field of education is with his notion of the zone of potential or proximal development: "what children can do with the assistance of others might be in some sense even more indicative

of their mental development than what they can do alone" (Vygotsky, 1978, p. 85). The zone of potential development is a description of those functions which a child can perform under adult guidance or with peer collaboration but is not yet mature enough to perform independently. It is a way of looking at a child's potential while taking into account what has already been achieved. It is a prospective, not retrospective way of looking at a child's development.


The zone of proximal or potential development is the essential feature of new learning. It awakens the internal processes that are in a state of development, and operate best when the child is interacting with people who are guiding his learning, e.g., the teacher. This is when the child is beyond him/herself without ever knowing it. This is the source of development, and creates the zone of proximal development (Bruner, 1976).

In learning or internalizing concepts, the child develops a system of meanings which helps to organize his/her thoughts. It is an internal reconstruction of external operations or objects.

Vygotsky's term "pivot" refers to an object or event which allows the child to subordinate objects to their meaning in such a way that the actions of the child on the object free him/her. The child names his/her referent, this referent shifts

from the object causing the actions, to the child's sense of meaning determining the action, where forces from within the child create the patterns of music intended. The child now sees the patterns he/she uses as the same ones used by the teachers. The heuristic value of Vygotsky's ideas in a psychologically sound music program lies in our use of the concepts of: the zone of potential development and the pivot. This dialectical clash of developing thought and language, and musical signs, come together more profoundly.

#### Grade One - Concept 1: Music may Move to a Steady Beat

In the grade one concept about steady beat, the zone of potential development might be witnessed in children who can only march or clap the steady beat if the teacher is demonstrating the beat by playing it, counting it, or enacting it somehow, but who cannot physically mark time to the steady beat in music without such guidance. With practice, this activity leads to the development of independent behaviour. The pivot occurs when the child actually feels the beat internally without its being marked aurally or visually and can recognize the beat in novel stimuli such as unfamiliar music. Now his/her actions are subordinated to the definite meaning of "beat", and he/she acts according to this meaning (Bruner, 1976, p. 553). Eventually, the children are led to depict the steady beat in notation  and to read it with vocal or physical enactment. This is the strict representation of internalized meaning.



### Grade Two - Concept 7: Rhythm Patterns May Accompany the Melody

In grade two, concept 7, the zone of potential development may occur when children can clap rhythms only when the teacher is clapping, playing them, or pointing rhythmically to notation. The pivot occurs when the child can act out the rhythm patterns without adult or peer assistance and can understand novel forms. The understanding that two more rhythm patterns can occur simultaneously should include the ability to perform a rhythm pattern while contrasting rhythm patterns are being performed by others.

At this point in the curriculum, all children are expected to have the ability to read certain rhythmic figures and to have the ability to notate some of the patterns they hear. This shows the actual attainment of a musical language. The writing of musical notation represents the internal imaging or feeling of rhythm which is a function of the process of internalization Vygotsky describes.

### Grade Three - Concept 13: Sounds and Silences Have Duration Which is Relatively Long or Short (whole, half, quarter, eighth note and rests)

In grade three, concept 13, the use of notes and rests of various durations is similar to the previously described concept. The zone of potential development is the difference between the rhythmic activities and representations which can be performed

independently, and what can be performed under teacher guidance. In any group of children there will likely be a great variance among the individuals in the group as determined by earlier learning, extra-curricular musical experiences, and the ability to learn new concepts.

Activities in this unit include reading rhythm patterns, moving to rhythms, playing on instruments, and performing two or more parts simultaneously. The activity which represents mastery is the ability to create and correctly notate a rhythmic accompaniment and then to perform it in a variety of settings, for example, as an accompaniment to a piece of music or as part of a rhythm ensemble. The pivot may occur during the creative endeavor, if it has not occurred previously, wherein the meaning of rhythm exists apart from the activity of performing it.

We can begin to appreciate how one rhythm concept at each of three grade levels can be taught using the psychological perspectives of Jerome Bruner and Lev Vygotsky's valuable heuristics. It also seems clear that the progression from one grade level to the next is given valuable insights by Werner's orthogenetic approach. The steps in the strategies can be presented to show a progression which not only coincides with Bruner's discovery-learning approach, but also to show Vygotsky's zone of proximal development and his notion of a pivot, in which the object or action is subordinate to meaning. The progression

leads to greater differentiation both in skill and in conceptual development.

An attempt will now be made to conduct a study of the music curriculum which looks at both processing and achievement. Such a study must have two parts: (1) a test of skills and knowledge; (2) an observation of children during music classes. Because of the nature of this study, only children will be tested and observed. Existing teaching styles and teaching strategies will not be documented or compared. Teachers will participate in the study by completing a questionnaire about the music program. (Appendix 9B)

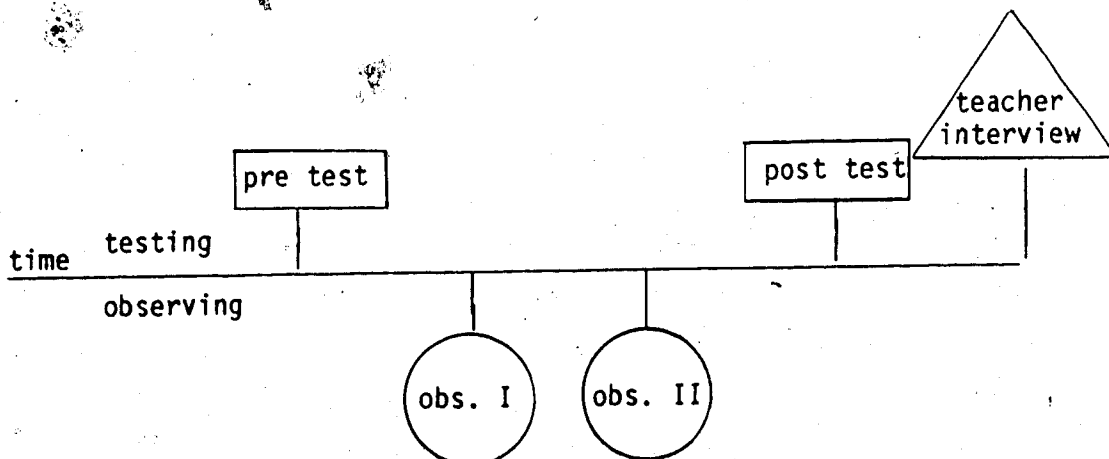
## CHAPTER IV

### DESIGN OF STUDY, FINDINGS, AND ANALYSIS

The study took place in six primary classrooms teaching Bilingual Ukrainian, in three schools representing three different school districts: Edmonton Public School, Edmonton Separate School and Sherwood Park Catholic School. All testing and observing occurred between March 6 and March 22, 1985. The purpose of the study was to observe students' behaviour and involvement during music classes and to test their understanding of rhythm concepts according to the prescribed objectives of the Alberta Curriculum Guide for Elementary Music (1977).

Three different types of investigation took place: (1) Achievement testing in the form of a pre-test, post-test based on the music curriculum (see Appendices 5, 6, 7); (2) classroom observations made to study the process of music learning; and (3) teacher interviews (see Appendix 9) conducted by the investigator.

Diagram 1



## Tests

A test with two parallel forms was formulated by one of the developers (not the investigator) of the Ukrainian Bilingual Music Program grades one to three, to determine the children's mastery of the all music concepts in the Rhythm unit appropriate for their grade levels (see Appendices 5, 6, 7). The two forms of each test were used alternatively, as pre-test and post-test, for each class of each grade level. The tests were specific to the music program, with questions and musical selections being chosen directly from the curriculum guide. Some of the questions were administered to all the students in each class, while other questions, requiring individual testing, were given to five of these students. The test developer was the independent tester, administering both the group and the individual portions of the test.

The pre-test was administered prior to the first observation, and the post-test was administered after the second. This format was intended to help determine whether or not changes in understanding rhythm concepts and skills have occurred during the time period between tests, and to suggest whether or not the objectives of the curriculum are being met.

## Subjects

The subjects were students in grades one, two and three in six Ukrainian Bilingual classrooms. At each grade level, two

different classes from two different schools were studied. Table I shows the number of students in each class and the grades in each of the participating schools.

### Observers

Trained observers were used, one more experienced in this style of observation than the other. The observers together entered each classroom on two occasions, exactly one week apart, to rate children's activities during their music classes. Neither observer had any knowledge of the music curriculum, or of the testing procedures being used by the program developer in the pre-test, post-test design. Each observation lasted eight minutes (see Appendix 8).

### Observation Procedure

The children were scored according to the procedure developed by Bishop (1983). By this procedure, children's actions, intentions, and productions are evaluated for "fluency", "purpose", and "control". The five dimensions of action which help to characterize a child's pattern of purpose, fluidity, and control are: the "body position dynamic", "tool use", "process duration", "process-product dynamic", and the "multiple events continuum". The descriptions and procedures for measuring these dimensions are found in Appendices 1 and 2.

Students were observed for eight minutes during each of

the two sessions, one week apart. The observers simultaneously, but independently, scored each child every thirty seconds, on the five categories listed above. Scores of 0, 1, 2, or 3 were given according to the behaviours exhibiting the child's level of involvement in the task. These behaviours are described in appendices 2a, 2b, 2c, 2d and 2e.

Bishop's (1983) observation model was used primarily because an observation system was needed which would cut across all three theories, which could be taught to observers, and which had previously exhibited good reliability. This system was broad enough to cover many aspects of children's classroom behaviour yet specific enough to account for all three theories. The categories of body position and tool use best show Werner's concepts of hierarchic integration and differentiation. The multiple events continuum and process-product dynamic can demonstrate Bruner's discovery learning and spiral curriculum. The scoring levels resemble Bruner's enactive, iconic, and symbolic levels of processing. Process-product dynamic and process duration can depict Vygotsky's notions of pivot, heaps, complexes and concepts.

As one purpose of the study was to examine the actual implementation of the curriculum in Ukrainian Bilingual classrooms, the program developer returned to each class to administer the post-test, i.e., other form of the test. Again, certain questions were given to five randomly selected students.

The same procedure for random selection of the five was used the second time, wherein all the students' test papers were numbered and the classroom teacher drew numbers to select the five for further testing of music. The questions on the pre- and post-tests follow the conceptual base of the Alberta Education Elementary Music Curriculum (1977). The administration of the post-test was intended to determine whether any changes in concept or skill acquisition was occurring.

This procedure did not control for teachers spending more time than is usually allowed for music in giving their classes extra preparation for the pre- and post-tests. However, since the time between testings did not exceed two weeks, it is assumed that the effects of over training were minimal. Since much of the rhythm component of the music program should be taught before melody, harmony, form, expression, and appreciation, it may be that significant differences between students' performance on pre-test and post-test were due to a sudden awareness of program objectives and a hurried attempt to "catch-up", on the part of teachers.

The final part of the investigation was an attempt to have the teachers participate in a reflection of the dynamics involved in their classrooms. A questionnaire (Appendix 9) was distributed by the investigator, and a short, taped interview took place within three or four school days, when the completed



questionnaires were picked up. The questionnaire and interview attempted to achieve clarification of the music program as it is understood and experienced by the teachers. The process of open-ended questions and open dialogue was an attempt at a dialectic, a mutual growth between the teacher and the investigator. The teachers' responses provided some insight into their impressions of the music curriculum. It gave the investigator a better understanding of the results from the testing and observation components of this study, and some ideas for enhancing the implementation of the program.

The questions investigated in the study were:

1. Which of the developmental theories seems most appropriate for teaching and learning in the music program?
2. What is the nature of the students' processing and integration within the context of each music lesson?
3. Are children in the Ukrainian Bilingual Program learning the music concepts, and are they able to demonstrate their understanding in musical behaviour?
4. Are teachers using the music program to meet the general objectives of music education (see page 1) and specific objectives in rhythm at each grade level?

### Description of Data

Pre- and post-test data, and data from the observation sessions was analyzed to determine the correlation between the test scores and the children's processing and classroom behaviour, as rated by the observers.

The three schools, (labelled A, B, and C) each had two classes participating in the study. School A has a grade one and grade three class; school B had a grade one and grade two class; and school C had a grade two and grade three class involved. Hereafter, the classes are labelled by the school letter and grade levels (1A, 1B, 2B, etc.).

The results of the pre-tests and post-tests can be seen in Tables I, IIa, IIb and IIc. These tables allow comparisons between grades, between classes within a grade, and from pre-test to post-test within a class. Overall, improvement from pre-test to post-test scores occurred in:

- grade one - school B,
- grade two - schools B and C, and,
- grade three - school A.

A deterioration of achievement as measured by the achievement test occurred in:

grade one - school A, in which ten of nineteen students scored lower on the post-test, and,

grade three - school C, where only a slight decrease occurred, but three of fifteen students got lower scores and nine had no change in score.

To make a comparative analysis readily available, Table I shows the converted scores. Note that class test scores ranged from 10.9% correct (pre-test score, grade one - school B) to 89.7% correct (post-test score, grade two - school C). Pre- post-test improvement can also be seen on Tables I, IIa, IIb, IIc. The greatest improvement occurred in grade three - school A (36.1%) while the greatest deterioration in score occurred in grade one - school A (-18.4%).

TABLE I - CONVERTED SCORES ON CLASS RESULTS ON PRE- POST-TESTS AND OBSERVATIONS

(from raw scores, see Appendix 3c)

	N	Pre-test		Observation I		Observation II		Post-Test		Post-test Improvement	
		Class	Individual	Obs. 1	Obs. 2	Obs. 1	Obs. 2	Class	Individual	Class	Individual
<b>Grade 1</b>											
School A	19	.579	.583	.443	.493	.617	.567	.395	.750	-.184	.167
School B	25	.109	.333	.483	.503	.440	.400	.385	.383	.276	.050
<b>Grade 2</b>											
School B	22	.423	.417	.470	.473	.497	.537	.606	.533	.183	.116
School C	17	.846	.583	.487	.477	.530	.510	.897	.750	.051	.167
<b>Grade 3</b>											
School A	26	.293	.243	.433	.400	.467	.480	.654	.500	.361	.207
School C	15	.298	.229	.470	.587	.543	.557	.274	.243	-.024	.014

TABLE IIa - AVERAGE SCORES BY CLASS, BY TIME, BY CATEGORY

TEST SCORES			OBSERVATION SCORES							
Grade	School	Time	Score	Overall Average Score	Average By Time	Process Product 11	Multiple Events 12	Body Position 13	Tool Use 14	Process Duration Intensity 15
1	A	1	2.444	6.36	5.92	4.4	5.2	5.6	6.8	7.6
		2	1.579							
	B	1	0.435	5.4	6.0	6.0	5.8	5.8	4.8	4.8
		2	1.542							
2	B	1	3.550	6.06	5.68	5.0	5.8	5.6	6.2	5.8
		2	4.850							
	C	1	6.765	6.14	5.72	5.6	5.8	6.2	5.4	5.6
		2	7.176							
3	A	1	1.730	5.3	4.88	4.4	4.8	4.8	5.2	5.2
		2	3.923							
	C	1	1.786	6.84	7.0	6.0	6.0	7.4	7.4	8.2
		2	1.643							

TABLE IIb - TEST SCORES AVERAGED BY GRADE

All Classes Averaged	Time 1 - 2.641; (pre-test)	Time 2 - 3.425 (post-test)
Grade 1	Time 1 - 1.317;	Time 2 - 1.558
Grade 2	Time 1 - 5.027;	Time 2 - 5.919
Grade 3	Time 1 - 1.769;	Time 2 - 3.125

TABLE IIc - TEST SCORES - AVERAGE OF PRE- AND POST-TEST FOR EACH CLASS

	pre-test score	post-test score
Grade 1 School A	2.0	6.36
B	1.0	5.4
Grade 2 School B	4.2	6.06
C	6.971	6.14
Grade 3 School A	2.863	5.3
C	1.714	6.84

Table VIIb (in Appendix 3b) indicates that the difference between pre-test and post-test scores over all grades is significant ( $P = .05$ ) on the ANOVA, nested design. The difference in score between classes is significant within each grade.

The observation scores done on five individuals in each class on two occasions between the administration of the pre-test and post-test were also analyzed. The scores given by the observers were analyzed for agreement in two ways (Tables III and VI). First, the interjudge reliability test was applied to each of the 2400 scores. The percentage of agreement ranges from 59.72% for category 3 (Body Position) in grade one, to 76.25% agreement for the same category in grade three. No one category showed more consistency or agreement than any other.

TABLE III - INTERJUDGE RELIABILITY

Interjudge Reliability Test - Grade 1  
Percentage Agreement Among Raters

Raters	Category 1	Category 2	Category 3	Category 4	Category 5	All Categories
1 X 2	75.32%	69.74%	59.72%	62.50%	63.51%	66.31%
All	75.32%	69.74%	59.72%	62.50%	63.51%	66.31%

Interjudge Reliability Test - Grade 2  
Percentage Agreement Among Raters

Raters	Category 1	Category 2	Category 3	Category 4	Category 5	All Categories
2	67.50%	66.25%	60.00%	71.25%	65.00%	66.00%
All	67.50%	66.25%	60.00%	71.25%	65.00%	66.00%

Interjudge Reliability Test - Grade 3  
Percentage Agreement Among Raters

Raters	Category 1	Category 2	Category 3	Category 4	Category 5	All Categories
1 X 2	69.23%	67.50%	76.25%	60.00%	61.25%	66.83%
All	69.23%	67.50%	76.25%	60.00%	61.25%	66.83%

TABLE IV - SCHOOLS SHOWING HIGHEST SCORES, BY GRADE, BY TEST

	Pre-test	Obs. I	Obs. II	Post-test
Grade 1	school A	school B	school A	school A
Grade 2	school C	school C	school C	school C
Grade 3	school A	school C	school C	school A

TABLE V - SUMMARY OF SCORES BY GRADE, BY CATEGORY

Grade	Category					Average Of All Categories Per Grade	Score Spread Within Grade
	1	2	3	4	5		
1	75.32	69.74	59.72	62.50	63.51	66.31	15.6
2	67.50	66.25	60.00	71.25	65.00	66.00	11.25
3	69.23	67.50	76.25	60.00	61.25	66.83	16.25
Average Over All Grades	70.68	67.83	65.32	64.58	63.25	66.38	
Category Score Spread	7.82	3.49	16.53	11.25	3.75		

Score Range: 59.72% - 76.25%

Gr 1#3 Gr 3#3

Legend

- Category 1 - Process - Product Dynamic
- Category 2 - Multiple Events Factor
- Category 3 - Body Position
- Category 4 - Tool Use
- Category 5 - Process Duration (Quality of Attending)



In grade one, the greatest agreement in scoring between the two judges was in category 1 (Process-Product Dynamic) and the least agreement was in category 3 (Body Position). In grade two, the greatest agreement was in category 4 (Tool Use) and the least agreement was in category 3 (Body Position). In grade three, the greatest agreement was in category 3 (Body Position) and the least agreement was in category 4 (Tool Use). When the category scores were averaged over all three grades, the greatest agreement was in category 1 (Process-Product Dynamic), the least agreement in category 5 (Process Duration).

TABLE VI - INTERJUDGE COMPARISON OF TOTAL SCORES  
COMPARED SCORE OF OBSERVER 1 TO OBSERVER 2

		Observation I	Observation II
Grade 1	School B	-.020	.040
	School A	-.050	.050
Grade 2	School B	-.003	-.040
	School C	.010	.020
Grade 3	School A	.033	-.013
	School C	-.117	-.014

The second comparative analysis was done on score totals for each class. When interjudge comparisons were made on the total scores for subjects in each classroom, the results were as indicated on Table III, with a comparison range of 0.3% to 11.7% difference between judges (or, 99.7% to 88.3% agreement). These

total scores will be used during further analysis and discussion rather than averaged or comparative scores between observers.

Although one of the two observers had a great deal more experience using the rating scale than did the other, having participated in previous studies observing children's modes of processing, the inexperienced observer was neither consistently lower nor consistently higher in his scoring than the experienced judge. The difference in scores indicates that no category was either easier or more difficult to score.

#### Analysis of Data

The scores indicate that certain classes were processing at a much higher level than other classes. Table Ib indicates a range of observation scores from 0.400 to 0.617.

When the ANOVA, nested design, was applied, no significant differences ( $P < .05$ ) occurred in scores between grades, classes, or times, in three of the observation categories - Multiple Events Factor (Table IXb), Body Position (Table Xb), and Tool Use (Table XIb, in Appendix 4). Table VIIIb shows that significantly different scores occurred between observation I and observation II on the Process-Product Dynamic ( $P = 0.0222$ ). Generally, the score improved from time 1 to time 2 on this variable, indicating that children's behaviour was more goal-oriented and productive. This may also indicate that the

children experienced less intrusion by the observers the second time and that they likely enjoyed the music lesson more. A significant difference ( $P = 0.0311$ ) was also seen between schools (classes) within each grade level on the Process Duration variable (Table XIIb), especially in grades one and three. In both these grades, the class whose pre-test, post-test, and overall behaviour observation scores were higher, scored significantly higher on this Process-Duration variable. This may be an indication that in these two classrooms, the children's involvement, or psychological time on the task or activity is the closest measure to their overall achievement scores.

#### Summary

It appears, in this study at least, that the Process-Product Variable, and Process Duration Variable correlate more closely with student achievement and overall attentive behaviour than do the other observation categories. Particularly in grades one and three, where these scores were significant, the measures of students' time on task (Process Duration) and goal-oriented or productive behaviour (Process-Product) may be indicators of greater learning, hence, better achievement.

#### Comments on the Test Findings

The design of the field study was an attempt to see how psychological processing can be measured and whether or not it relates to learning, or concept acquisition as measured by tests of knowledge and skill in music.

It was expected that in classrooms, where the greatest amount of active learning takes place, as measured by the overall test scores, and by the improvement shown between pre- and post-testing, that the observers would record higher levels of processing in all five categories of behaviour being observed. As Table IV showed, this was the case in grade two, where one school dominated in both pre-test and post-test scores, as well as on behaviour and processing as shown on the observation scores. In grade one, school A had higher pre- and post-test scores than school B. However, the post-test scores for school B did increase, whereas they decreased for school A (Tables I, IIa, IIc) and school B had a higher score on the first observation. The amount of difference between scores of the two schools is smaller on the first observation than on the second observation. School A, however, showed an overall decrease in scores from pre-test to post-test, an unusual phenomenon, if one assumes that students had learned the music concepts prior to testing, and deterioration should not occur during the two week time span. In grade three, an unexpected result was noted. The class from school C showed higher scores in the behaviour observation, but their test scores were lower. On the pre-test, the scores of both classes were similar, but students in school A demonstrated that greater learning had occurred by the time of the post-test. The expectation that these students should then have scored higher on the observations was not fulfilled. Only the scores on the Process Duration variable did reflect this expected result.

## CHAPTER V

### CONCLUSIONS AND RAMIFICATIONS

Before dealing with the problems inherent in this study and with suggestions for improving and implementing the curriculum, some points must be raised. Speculation arises as to why the data results were so different from what was expected, in that, high observation scores did not always accompany high test scores.

#### Comments on the Test Findings

1. First of all, the underlying assumption held by most educators, that all learning can be measured by means of the pre-test, post-test design can be questioned. In this case, in two classes, (A1 and B3) the achievement scores decreased on the post-test. There can be many reasons for this finding. Although the pre-test and post-test were parallel forms, designed and administered by one of the music program developers, and checked by a testing design specialist, the test design may have been faulty with one form more difficult, or the style of administering the questions could have differed between pre-and post-test. (Each form of each test was used as a pre-test in one school but as a post-test in the other school). Table VIIb indicated that the test scores were significantly different ( $P < .05$ ) on the ANOVA, nested design, whether measured according to time (pre-test to post-

test), or according to class within each grade. From this it can be assumed that learning was taking place during the observations between pre- and post-testing, and that significantly different things were happening in the different classes. It should be noted, however, that all the individually tested students in all six classes showed improvement on the post-test.

2. The students may have been experiencing the rhythm concepts that were being tested in the lesson just prior to the pre-test but not in those before the post-test. Thus, some forgetting may have occurred, resulting in lower post-test scores than anticipated. Such deterioration can also be explained by the possibility that teachers prepared students for the pre-test but did not feel it was necessary to review or continue rhythm concepts after the pre-test. This occurred in grade one - school A, for example, where another teacher had been asked to teach some music classes prior to our testing. But still, the scores of this class exceeded those of the grade one class from school B.

3. High scores on the observations indicated that children were attending and processing information at a competent level. The scores on the observations could be high if the teachers had their students highly motivated and involved in their lessons. But the lessons may have been unrelated to the

concepts being tested, which explains how the high observation scores can accompany low test scores. The rhythm concepts were chosen for testing because they are the first and most basic units for each year's work. If followed sequentially, all concepts in rhythm should have been acquired and reviewed many times by March and April of the school year. This should have prevented a situation in which students being tested had not had exposure to the rhythm experiences for their grade level. Only one class performed well, as determined by the tester, on both pre- and post-tests (grade two - school B), indicating a good grasp of the rhythm concepts for that grade. Lower scores in all the other classes indicated a problem. Either the concepts are not being taught effectively, or the concepts are beyond the grasp of the students in these classes.

4. The testing effect itself must have influenced both teachers and students. Once teacher, apparently intimidated by the impending study, wanted to back out only days before the pre-test was to be administered to her class. Discussion and reassurances from the test administrator and the investigator persuaded her to participate in the study as planned. Having unfamiliar people doing testing and observing during class time, causes a change in the regular pattern of activities, so student behaviour may have varied from the norm. Although teachers were briefed on the purpose and agenda

of the study, they still felt as though their teaching was under scrutiny. This attitude may have resulted in a change of teaching style during observations, and also transferred to children causing a possible change in behaviour and attitude.

It was noted that the second observation netted a significantly higher score in the Process-Product-Dynamic, perhaps indicating that students had less difficulty attending to their lessons the second time the observers entered the class. With no significant differences in the scores on the Multiple-Events Factor, Body Position, and Tool Use, one can assume that these variables are indicative of children's classroom behaviour in general and that there were no significantly different groups of children in this study.

#### Improving the Test Design

This study may serve as a paradigm for further investigation of the curriculum from the point of view of student knowledge and the dynamics of students processing. However, a number of changes would be recommended in order to obtain more information and to make data processing more efficient.

The pre-test should be administered before the students have been taught the rhythm concepts for the grade level, so the testing should be done early in the school year.



All teachers should then be asked to teach lessons from the specific concepts area of the rhythm unit of the curriculum, during the times when the observers are in the classrooms scoring the selected individuals whose behaviour is being observed.

Once the small group of students is selected for individual testing on the pre-test, the same students would be used for the observation study and the individual post-test. This would ensure a different continuity not present in this study. Here subjects were selected randomly for each segment of the study. Doing so, allowed the study of group performances.

Each music period during which observations are done could be videotaped. This would enable the observers to re-check their scores. The videotape would be a permanent record which could be used later.

More than five students in each class could be selected and studied. This would give a greater number of scores for analysis.

If possible, the testing and observations should occur during regular music times in each class, instead of rearranging times to suit all parties. This, however, requires a great amount of flexibility on the part of the testers and observers. One of the shortcomings of this study was the fact that the two observers

had such differing amounts of practice. Hence, all observers should be better experienced in this scoring method.

As a follow-up to the study, an observation and scoring system could be developed for teachers to use during classes. This would enable teachers to evaluate their students while they are in the process of teaching.

#### Problems with the Testing Procedure

1. One of the problems encountered during the testing was just mentioned: some teachers felt intimidated and thought that their teaching was being observed. This information was revealed during the post-study interviews.
2. Locating observers who were familiar with the five-category observation model and with time available to observe was difficult. However, teachers were extremely accommodating, rearranging class schedules if necessary, so that music classes could be held when the observers were available.
3. The reliability and validity of the pre-test and post-test was difficult to determine in such a small-scale study. Some procedures were followed to minimize this difficulty.

4. The five different teachers had varying degrees of competence in the area of music. Their familiarity with and understanding of the music curriculum varied. There were also differences in teaching style within the group of participating teachers. As a consequence, the pre- and post-tests measure students' achievement by comparing classes of students whose experiences may vary according to a variety of factors: time spent on music, time spent on music curriculum or concept development, teacher competence in music, student interest in music (motivation), and student aptitude. The teachers' co-operation and enthusiasm for the study were encouraging and made classroom visits very easy.

#### How the Theories Relate to the Test Design

Heinz Werner's organismic-developmental approach allows for genetic/maturation factors to combine with environmental factors in the course of growth and development. From a state of basically reflexive behaviour, the individual learns to respond through experience and reaches the level of symbol-formation in which there is conceptualization, greater hierarchization of knowledge, and clarification and understanding of specifics. In his theory we understand the process of change because we know the outcome or end-state. The graded approach to learning used in the Alberta public school system corresponds to this theory. Each succeeding year the child is presented with information that is more specific, greater in detail, and also that which gives more

refinement to generalizations. This results in a developmental hierarchization of knowledge as the child progresses through the grades.

The study was designed so that the tests used as pre-tests and post-tests demonstrate this increased hierarchization of knowledge with each higher grade level. This increased generalization and differentiation corresponds to the concept structure found in the Alberta Education Curriculum Guide for Elementary Music (1977). For example, in the grade one test, students were asked to clap or pat the beat in a simple piece of music. In grade two, students were asked to clap a simple rhythm (not just the steady beat) to a simple piece of music. In grade three, students were asked to determine through clapping the beat, whether the beats were grouped in 2's or in 3's. Grade one students were required to read and clap simple rhythms, while grade two students had to clap rhythms with accents and recognize rhythms clapped by the teacher. Grade three students had to determine time signatures of rhythms and put in bar line to show that they recognized both note durations and time signatures. Werner's system is suitable for explaining the steps in the development of a skill, however, the actual learning process, what happens during the changes, is not emphasized. It explains only the stereotype. For example, as a grade three student claps or taps the beat of a song in order to determine whether beats are grouped in 2's (duple meter) or in 3's (triple meter), a number of

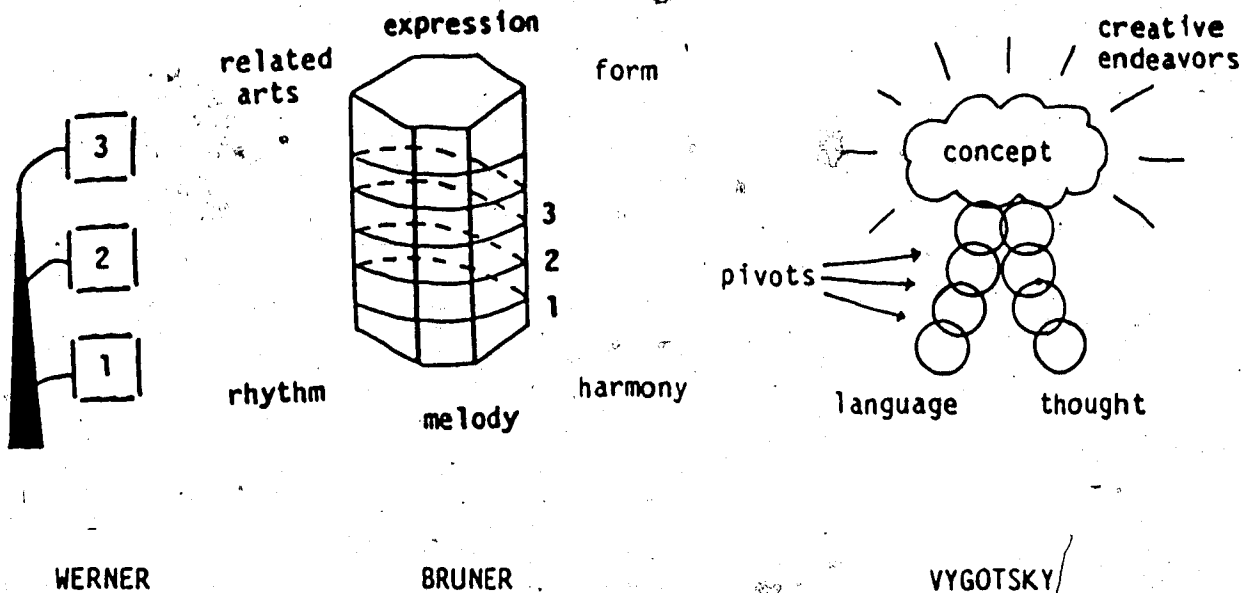
hierarchical steps must take place: 1) keep the beat, 2) hear and enact the accented beats, 3) count beats, always calling the accented beat "one", 4) determine the meter, or grouping of beats. These are the activities, but what is the hierarchical cognitive process which leads to the acquisition of this skill?

Jerome Bruner was a proponent of the spiral curriculum and of discovery learning. The acquisition of new information is based on minimal preparation and information. Then manipulation of concrete materials results in a transformation of the original frame of reference. The child is encouraged to represent his/her experiences in the form of mental images - hence the formation of concepts. After the child forms and demonstrates his/her own representations, the standard or accepted representations (notation) are taught. The unfortunate aspect of this model is that it stifles creativity - as the child nears the concept, the range of behaviour diminishes; the child must catapult from a narrower base. The end-point is established ahead of the child. Hence, in this study it became necessary to go beyond testing the acquisition of desired concepts. This study also included an observation of children's concept development during the music classes. The three levels of behaviour scores reflect a similarity to Bruner's enactive, iconic and symbolic phases of development.

Lev Vygotsky's notion of a symbol system is one where the

conceptual operations of a child would allow him/her to go beyond him/herself and the concrete manipulations used to function to where the learner can create things unknown. He/she would operate within a zone of proximal development - which is ever-changing and dialectic (Reigel, 1978). Each product gives rise to a new process and a new, wider range of responses which outstep his/her existing responses, where the child learns how to learn, and learns also how to create in order to learn. For example, he/she can take a melody and then make it into a picture or poem, then tell a story. He/she can use these notation patterns, to create a new rhythm or melody, i.e. create something that never was.

In the study, the behaviour observation evaluated children's quality of attending to the lesson (process-product), duration of attention, body and tool use and versatility (multiple events) during activities, presumably while in the zone of proximal development. The teacher led activities in which children participated while developing and learning music concepts. Perhaps concept development occurs as a pivot - when the meaning becomes separate from the activity and the child brings this meaning to another activity, and then can free him/herself from both. This was determined through the testing process. In some cases, the test scoring allowed for "marginal" answers - i.e. the tester determined that the child has partial, or incomplete knowledge of the concept. The "marginal" score may indicate that a child is in a zone of proximal development for that concept.



### Werner, Bruner, Vygotsky and the Music Curriculum

The spiral curriculum à la Jerome Bruner is in place. The Alberta elementary music curriculum covers the concepts of rhythm, melody, harmony, form, expression and related arts (music appreciation) in every grade from one to six. The skills of listening, moving, singing, playing instruments, reading and creating music, are also all developed gradually each year. This makes a nice neat package of skills and concepts. But what about individual differences? What about individual and varied talents, interest and background in music? What about differences in teachers, time spent on music, importance placed on performance? Are all children ready at grade two to differentiate between major and minor tonalities? How can a child who cannot yet differenti-

ate between high or low tones, or match pitch with his/her voice, create melodies? Can we assume that by the beginning of grade three all students can not only recognize major and minor, but are now ready to locate the tonic chords in major or minor accompaniments? The spiral curriculum, with set objectives at each grade level is in place not only for music, but also math, science, language arts, social studies and other subjects. Its greatest drawback is in the way that end products are specified to the exclusion of children's learning styles and learning processes and the consequences created which are their own.

Werner's hierarchization of knowledge where both greater differentiation and globalization occur, may be useful for assessing skill development. Teaching style and materials used determine the process through which a child's experiences lead to symbol-formation. This process could be more carefully addressed in the curriculum. Because Werner deals more with the individual's path of skill or concept attainment than does Bruner in the spiral curriculum, individual differences in processing and consequence can be examined more carefully. In one classroom children who can differentiate between beat and rhythm when they are asked to clap or depict in notation one or the other, have differentiated and are ready to go on. In the same classroom, children who can create and perform rhythmic accompaniments to songs may be reflecting Werner's hierarchical concepts. Some children who cannot yet march to the beat of music would be showing poor differentiation.



Of the three theorists, Vygotsky deals with the processing individual, explaining how thought and language work together in the way the child learns. His notion of pivot is useful in understanding acquisition of learning. Likewise, Werner's notions of differentiation and globalization are useful for monitoring children learning and not learning the objectives of the lesson.

The music curriculum, or a more detailed music program such as the Ukrainian Bilingual Music Program (interim edition) currently lists desired results for children's conceptual development, given a series of activities and experiences leading to proficiency in music. The sequence of activities should be assessed to see if individual differences can be met throughout the music lessons and to see if the sequence of activities leads to a gradual movement from thoughts, activities, and language working independently, to an amalgam of all three. The resulting flash of meaning becomes enlightened and dynamic - a musical concept now part of life ingrained throughout but independent forever from the language, or processing, or mechanisms which lead to it.

#### Future Curriculum Design

Curriculum writing has in the past, related primarily to course content and idealistic objectives. While these need not be ignored, the overriding focus of all curricula should be the

learner and the pattern of his/her learning style. Since individual differences pervade the cross-section of any group of students, a curriculum or program must offer alternative activities and alternative expectations. Information should be provided to instructors about the learning processes which children experience. To help teachers choose appropriate activities and materials, on-going evaluation techniques should be provided.

A lesson on differentiating beat from rhythm may involve part of a class playing the beat of the song on tambourines while the teacher does the same (zone of potential development - children can only perform the activity while under the teacher's direction); a part of the class playing the melodic rhythm on triangles, without the teacher's assistance (pivots occurring); two or three individuals creating rhythmic and/or melodic ostinati as accompaniment; and one or two individuals creating new words to go with the melody (going beyond the concept).

If teachers are given information about how children process and learn, then perhaps evaluation techniques could be developed that are ongoing. A variety of teaching methods or student activities can be suggested. On any set of assignments, the easy, the regular, and the enrichment activities should occur in the textbook. The teacher has the option of assigning certain work to some students and different work to other students - all

on the same concept and leading to the same grade objective but showing a varied approach to meet varying needs. However, no matter how well a program or curriculum is designed, the onus is still on the teacher to recognize and attempt to meet different processing capabilities in the student.

### Implementing the Ukrainian Bilingual Music Program: Conclusions

#### Reached

In answer to the questions addressed in the study the investigator reached the following conclusions based on test scores, observation results, and responses to a teacher questionnaire:

1. Rather than select one particular developmental theory, it became obvious that a curriculum model based on the combined theories of Werner, Bruner and Vygotsky would better serve as the basis for curriculum analysis.
2. The nature of the students' processing and integration within the context of each music lesson was assessed by the students' scores on five variables: body position, tool use, process duration, process-product, and multiple events during the observation study. Table I, which shows scores ranging from .400 (of 40%) to .617 (or 61.7%), suggests that, at least during the observed lessons, students' processing behaviour is not operating at a very high level, and that new methods might

be tried to enhance the learning process. For example, whereas in this study each teacher used her own method, a future study might observe children being taught according to the curriculum model developed in this thesis.

3. The children's understanding and use of musical concepts was determined by their scores on pre- and post-tests of concepts appropriate for grade level. If a 70% score is used to indicate mastery, then only one class (grade 2, school c) achieved mastery of rhythm concepts for their grade level (see Tables I, IIa). In the other five Ukrainian Bilingual classrooms tested in this study, children did not demonstrate sufficient understanding of musical concepts. In answer to question 3 (page 53), one would have to conclude that the results are not consistent.
  
4. The teachers' use of the music program to meet the general objectives of music education (p. 1) and specific rhythm objectives at each grade level was determined by their responses to the questionnaire (Appendix 9B). Relative use of the program, understanding of it, and satisfaction with it varied from teacher to teacher. Generally, even if teachers used the music program, they did not use it exclusively or in its entirety. Teachers cited the following reasons for not adhering to the prepared music curriculum:

- a. Some expectations or objectives at each grade level as specified in the Curriculum Guide for Elementary Music - Alberta Education - 1977, are quite demanding and too difficult for most students.
- b. The sixty minutes per week of teaching music does not give adequate time to cover all the required objectives.
- c. In a bilingual classroom, language teaching is always in process so teaching new songs takes a lot longer in that learning the words and the meaning of songs precede the musical learning. Also, learning music terminology in two languages takes more time.
- d. Teachers who lack a strong musical background are not able to accommodate their music lessons and teach the required music objectives with the repertoire being taught for special occasions.
- e. Some teachers expressed a need for regular inservicing and for availability of consultants' services to assist them in teaching music, and in some cases to give teachers a greater musical skill. Other problems specific to the Ukrainian Bilingual Program reflect other needs - print and taped resources.

## Suggestions for the Future

### Music Program

Teachers and administrators must be briefed on the importance of music and the basic philosophy of the Alberta Music Curriculum (see page 1 of this thesis). Administrators must help by providing adequate space, print materials, musical instruments, and support for music. Development of skills, concepts, creativity and sensitivity should always accompany performance of music. Hence, care should be taken whenever Christmas and Easter programs come along to continue music education and stress concept and skill development with the repertoire being rehearsed.

When lessons or programs are planned, the fundamentals of child development and learning may need to be more carefully addressed in curriculum guides, at inservice sessions, and during staff professional development programs.

Observation results indicate that few students in the entire study were operating at the top level on any of the performance categories. This can be interpreted as showing that enduring interest, and insightful learning seldom occurred during the observations. It appears that teachers and students need to be more enthusiastic and more involved in their music classes.

### Recommendations

It is recommended that a more extensive inservicing pro-

gram be developed and that all Ukrainian Bilingual music teachers attend the sessions. Topics to be covered would include:

- . upgrading teachers' musical knowledge and skill
- . motivational techniques
- . goals and philosophies of teaching music
- . psychological factors to be considered
- . methods for planning and structuring lessons to accommodate children at varying levels of concept and skill attainment
- . use of different techniques
- . provide teachers with a scoring guide to help evaluate students
- . development of standardized tests so teachers can determine whether or not their pupils are meeting the course requirements.

Another recommendation is that properly executed sample lessons should be made available on videotapes to help teachers, both in planning and teaching.

#### Further Study

It is recommended that further studies be carried out to study not just music but other subjects as well. Currently, standardized tests are used extensively in Alberta at all grade levels in core subject areas.

Different ways of assessing students, based on zone of proximal development or potential ability may need to be developed. Studies of how children process, like the observation used in this study, may need to be further refined and implemented, to avoid end point thinking.

The study of children in a learning situation needs to be continued so that more extensive evidence on learning can lead to more effective teaching. Longitudinal studies could show how children progress at different rates through the degrees of concept attainment - from success while led by an instructor to independent manipulation of the ideas (pivot), to creative endeavors founded on the conceptual base. Videotaped lessons would be an aid to scoring, since more subjects could be studied for longer periods of time. This would also assist the longitudinal investigation.

Educators must become less concerned with whether or not children have learned, and more concerned with how do children learn and how can "I" enhance this process. Use of theories such as those of Werner and Vygotsky with their notions of differentiation, hierarchization and the pivot and zone of proximal development are especially useful in helping to understand these processes and in planning, teaching, and observing lessons. Vygotsky's theory is especially useful when planning to accommodate a lesson to the varying degrees of under-



standing in the children of one class. Once teachers understand how children proceed through a zone of proximal development, to experience a pivot where the concept or meaning exists apart from the actions leading to it, they can lead children through a successful learning experience. Teaching by working at activities together, and gradually leading children to be able to function independently seems to meet the needs of the music program most adequately. In such a system, the processes and achievements can be open-ended. This is essential in enhancing the music program in which creativity is considered the highest form of artistic production.

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APPENDICES

APPENDIX 1Description of Five Observation Variables

1. The body position dynamic. The whole body as a function, processing meaning. What is the orientation toward the activity? What is the image in process? The body position is a dynamic unit which whirls in space. The body position infers certain things about the person. The body flows in time through space in a world which ever changes. It is a pivot from which the child interacts with the world and presents himself to the world. The body position is one of the axes which shows through activity how meaning is generated, how flow is composed by the child. Body allows all to happen, body position shows how the body as the self is interacting. Body position is both verb and noun and adjective and adverb. It is interactive, indicative and metaphorical in its relationship to meaning and intent.

2. The fluency of tool use. Acts of doing, involving object(s) of focus and means of production. The tools a child uses in expressing volitional and non-volitional acts might include: face, tongue, mouth, eyes, hands, pencil, typewriter, piano, dance floor, stage, skipping rope. The child in action creates meaning as he/she communicates and lives. The functions themselves become channeled through the child and his culture in dynamic union. Tools are extensions of the



self. They express meaning and intent in the way in which they are used.

3. The duration of process. A dynamic concept of a motion and span of action. This time is not linear time but psychological time where awareness and non-awareness are present and considered and not considered. This is process in composition. All functions are considered, monitored and ignored as the changes occur. There is a space/time context, a dynamic reality within which to function. Patterns of action take place and space in which to function is created. What is the intensity of action? What is the thrust of the action within the action? This variable includes all the others.

4. The process-product dynamic. These are acts of creativity (involving body position, tool function and multiple variables). There is an entire gestalt of process and product of that process. Is the effect or product greater than the sum of those parts which make it up? Is the action producing a consequence or is it inconsequential? Does the consequence outshine the process? This dynamic is difficult to conceive and hard to score. Our referent here is the very act of creativity itself at the moment of insight when the actions of the creator collide with those of product and become so inseparable to what is produced. This something is new,

unique and old and banal. Work often gets done without the child knowing all that went into the product. The unconscious is at work and dynamically interacts with the conscious when process/product is high.

5. The multiple events continuum. These are the numerous different actions and activities and processes that can be expressed at the same moment. Usually these are under the direction of the child. The child in flow performs many actions at the same time and is able to attend to them simultaneously. A child, for instance, might simultaneously: listen to music; discern and tap the foot to the beat; tap the melodic rhythm with a pencil, sing the words; drink a coke; and read a book. Some can participate in multiple variables more easily than others. Some can attend to only a limited number of variables at once.

These five variables are metaphorical indications, symbols of a child's frame of reference, organization for action, action and consequence, and action unending in his/her interactions with the environment. If a body uses its tools willfully and intentionally in a psychologically meaningful time/space then meaning and action are one and alive, subjective and objective, when consequence and process are dynamic and indistinguishable. (Bishop, 1983).

A four-level scoring scale was developed for each factor. The highest rating was three points, the lowest rating, or lack of activity rated a zero. Three of the points on the rating scale resemble Bruner's (1964) three modes of representation: enactive, iconic, and symbolic. This will be explained for each factor as it may apply in a music class setting.

APPENDIX 2aScoring KeyBody Position Dynamic

- 3 Points      The child's movement is patterned and sequential. He/she is bent slightly forward, directed to the activity, in focus. There are no distractions, yet attention is held flexibly. The posture changes in graceful, flowing motions as the activity demands.
- 2 Points      The child is straight and inflexible. He/she directed toward the activity and participates, but strains to keep the focus and shuns distractions with difficulty. His/her actions are awkward and jerky.
- 1 Point      The child's position and actions occasionally focus, but mostly disconnect. He/she is easily distracted and the body moves according to the changing focus. e.g. a knock on the door, another child standing up, a change in activity.
- 0              The child does not focus anywhere in particular with his body. His/her movements are unrelated and random in ways the child commands.

APPENDIX 2bScoring KeyFluency of Tool Use

- 3 Points      Whether he/she is using a pencil, a musical instrument, his hands, feet, or his mouth, all the child's actions are smooth, directed, and efficient. No irrelevant or unrelated movements occur. He/she behaves in a way that is independently dependent on others. e.g. performs activity correctly and in rhythm even when those around are not.
- 2 Points      The child's movements are concentrated and jerky rather than smooth. Although the actions are directed to the activity in focus, they show evidence of inefficiency and difficulty. e.g. when playing an instrument, the child can only succeed while following an example.
- 1 Point      The child's actions are undirected and detached. They are sometimes in focus but usually not. e.g. the child makes stabs at playing the instrument, or plays but not in time to the music; or when singing he/she sings either the words or the melody, but has difficulty combining the two.

0

The child shows no evidence of activity with tools.  
e.g. holds the instrument but does not play it, or  
does not clap when that is the activity.

APPENDIX 2cScoring KeyProcess Duration

- 3 Points** The child is completely involved in the music lesson, and the time in process passes without his/her awareness. The intensity of concentration on the task is measured by the ability to be on task for several minutes without effort. This child displays a sense of surity of his/her actions, as expressed in the process underway.
- 2 Points** The child works consistently on the task but the work is more repetitious than smooth. The time involved is tritely connected. The child does not engage profoundly in the moments of process.
- 1 Point** The child's time on task is variable and scattered. He/she is distracted by many things or events during the lesson.
- 0** There is no time spent on the task, and no involvement in the flow of events transpiring.

APPENDIX 2dScoring KeyProcess- Product Dynamic

- 3 Points All the child's actions and attention are focussed, with no irrelevant movements and the consequences seem to emerge automatically. All processes flow faultlessly toward product attainment so that the starting point is hard to see. The child acts from a self in process-producing actions that connect and disconnect independently to the lesson at hand, however, to the observer, all connections and dimensions connect. The child is in flow.
- 2 Points The child seems stylized in his actions as he/she works toward achieving a certain end. All movements form a fixed pattern. The job gets done, but with no poetry or passion.
- 1 Point The end is never clear with this child. Starting and stopping characterize his/her actions and much disorganization and futility is shown. Possession and release make up the range of expressed actions.
- 0 There is no attempt to work at the tasks or toward the goals.



APPENDIX 2eScoring KeyMultiple Events Continuum

3 Points      The child is able to process gracefully in many ways at once. e.g. singing, tapping the beat and clapping or performing actions to the words, all at once; or, while writing, the child hums, and taps a tune, then moves along singing with actions and expression.

2 Points      Occasionally the child functions in many ways at once, but most of the time, the flow is singular. Processing is static and focused. Child attends to one thing at a time. Activities are pursued with effort. The child does not sing as he functions.

1 Point      This child may occasionally be able to do one thing, but not for a sustained length of time, and not smoothly or easily. It is difficult to see willful actions expressed. The child seems to have grasped the outer shell of the activity at hand but not the activity.

0              No activities are intended or expressed.

APPENDIX 3a TABLE VIIa - TEST SCORES

4 MAR 85 ANOVA for behaviour observation, nested design  
 16:22:21 University of Alberta

PART OF MODEL: GRAND MEAN

FREQ.: 237  
 SCORE1 3.038

PART OF MODEL: TIME

TIME TIME1 TIME2  
 FREQ.: 117 120  
 SCORE1 2.661 3.425

PART OF MODEL: GRADE

GRADE LEVEL1 LEVEL2 LEVEL3  
 FREQ.: 92 74 79  
 SCORE1 1.440 5.473 2.456

PART OF MODEL: GRADE\*TIME

GRADE LEVEL1 ..... LEVEL2 ..... LEVEL3 .....  
 TIME TIME1 ..... TIME2 ..... TIME1 ..... TIME2 .....  
 FREQ.: 41 43 37 39 40  
 SCORE1 1.317 1.553 5.027 5.019 1.769 3.125

PART OF MODEL: SCHOOL(GRADE)

GRADE LEVEL1 ..... LEVEL2 ..... LEVEL3 .....  
 SCHOOL LEVEL1 ..... LEVEL2 ..... LEVEL1 ..... LEVEL2 .....  
 FREQ.: 37 47 40 51 28  
 SCORE1 2.0 1.0 4.230 6.971 2.853 1.716

PART OF MODEL: TIME\*SCHOOL(GRADE)

GRADE LEVEL1 ..... LEVEL2 ..... LEVEL3 .....  
 SCHOOL LEVEL1 ..... LEVEL2 ..... LEVEL1 ..... LEVEL2 .....  
 TIME TIME1 ..... TIME2 ..... TIME1 ..... TIME2 .....  
 FREQ.: 18 19 23 24 20 20 20 26 14  
 SCORE1 2.444 1.579 0.445 1.342 3.550 4.850 6.765 7.176 1.750 3.923 1.786

GRADE LEVEL3  
 SCHOOL LEVEL2  
 TIME TIME2  
 FREQ.: 16  
 SCORE1 1.663

APPENDIX 3b TABLE VIIb

4 MAR 80 anova for behaviour observation, nested design  
16:22:21 University of Alberta

HIERARCHICAL		SUMMARY TABLE OF F-RATIOS FOR: SCORE1									
TYPE	PART OF MODEL	SSH	SSE	MSH	MSE	F-RATIO	DFH	DFF	PROB		
UNIV	GRADE	682.94	185.34	341.47	61.69	3.54	2.0	3.0	0.0994		
UNIV	SCHOOL(GRADE)	185.34	430.36	61.69	3.71	15.64	3.0	115.0	C.0		
UNIV	TIME	36.41	47.77	36.41	15.92	2.29	1.0	3.0	C-2277		
UNIV	GRADE*TIME	12.80	47.77	6.40	15.92	3.43	2.0	3.0	0.7005		
UNIV	TIME*SCHOOL(GRADE)	47.77	135.63	15.92	1.24	12.80	3.0	109.0	C.0		
UNIV	SCHOOL(GRADE)	185.04	430.06	61.69	3.71	15.64	3.0	116.0	C.0		
UNIV	CASES(GRADE*SCHOOL)	430.36	135.63	3.71	1.24	2.95	116.0	109.0	C.0		
UNIV	GRAND MEAN	2187.34	135.63	2187.34	1.24	1757.84	1.0	109.0	C.0		
UNIV	TIME*SCHOOL(GRADE)	47.77	135.63	15.92	1.24	12.80	3.0	109.0	C.0		
UNIV	CASES(GRADE*SCHOOL)	430.36	135.63	3.71	1.24	2.95	116.0	109.0	C.0		
UNIV	TIME*CASES(GRADE*SCHOOL)	135.63	***	1.24	***	***	109.0	***	***		

AN ASTERISK (\*) INDICATES IF APPROPRIATE ERROR TERM CANNOT BE FOUND. IF SO, RESIDUAL IS USED.

## APPENDIX 3c - RAW SCORES

	N	Pre-test		Observation I		Observation II		Post-test		Post-test Improvement	
		Class	Individual	Obs. 1	Obs. 2	Obs. 1	Obs. 2	Class	Individual	Class	Individual
<u>Grade 1</u>											
School A	19	44/76	35/60	133	148	185	170	30/76	45/60	-14	+10
School B	25	10/92	20/60	145	151	132	120	37/96	23/60	+27	+3
<u>Grade 2</u>											
School B	22	71/168	25/60	141	142	149	161	97/160	32/60	+26	+7
School C	17	115/136	35/60	146	143	159	153	122/136	45/60	+7	+10
<u>Grade 3</u>											
School A	26	44/150	17/70	130	120	140	144	102/156	35/70	+58	+18
School C	15	25/84	16/70	141	176	163	167	23/84	17/70	-2	+1

APPENDIX 4a TABLE VIIIa - PROCESS-PRODUCT DYNAMIC

4 MAR 86 ANOVA for behaviour observation nested design  
 15:57:43 University of Alberta

PART OF MODEL: GRAND MEAN

FREQ.: 60  
 SCORE11 5.733

PART OF MODEL: TIME

TIME TIME1 TIME2  
 FREQ.: 30 30  
 SCORE11 5.233 6.233

PART OF MODEL: GRADE

GRADE LEVEL1 LEVEL2 LEVEL3  
 FREQ.: 20 20 20  
 SCORE11 5.700 5.850 5.650

PART OF MODEL: GRADE\*TIME

GRADE LEVEL1 LEVEL2 LEVEL3  
 TIME TIME1 TIME2 TIME3  
 FREQ.: 10 10 10 10  
 SCORE11 5.200 6.200 5.300 5.200 6.400 5.200 6.100

PART OF MODEL: SCHOOL(GRADE)

GRADE LEVEL1 LEVEL2 LEVEL3  
 SCHOOL LEVEL1 LEVEL2 LEVEL3  
 FREQ.: 10 10 10 10  
 SCORE11 5.900 5.500 5.500 6.200 4.800 6.500

PART OF MODEL: TIME\*SCHOOL(GRADE)

GRADE LEVEL1 LEVEL2 LEVEL3  
 SCHOOL LEVEL1 LEVEL2 LEVEL3  
 TIME TIME1 TIME2 TIME3  
 FREQ.: 5 5 5 5  
 SCORE11 4.400 7.400 6.000 5.600 6.800 4.400 5.200 6.000 6.000 6.000 6.000

PART OF MODEL: GRADE\*TIME\*SCHOOL(GRADE)

GRADE LEVEL1 LEVEL2 LEVEL3  
 SCHOOL LEVEL1 LEVEL2 LEVEL3  
 TIME TIME1 TIME2 TIME3  
 FREQ.: 5 5 5 5  
 SCORE11 7.000

APPENDIX 4b TABLE VIIIb

4 MAR 80 anova for behaviour observation, nested design  
 15157163 University of Alberta

SUMMARY TABLE OF F-RATIOS FOR: SCORE11

HIERARCHICAL	SSH	SSE	MSH	MSE	F-RATIO	DFH	DFE	PROB
TYPE PART OF MODEL								
UNIV GRADE	0.43	17.70	0.22	5.90	2.06	2.0	3.0	0.9624
UNIV SCHOOL(GRADE)	17.70	70.60	5.90	2.96	2.01	3.0	24.0	0.1600
UNIV TIME	15.0	20.10	15.0	6.70	2.24	1.0	3.0	0.2315
UNIV GRADE*TIME	0.10	20.10	0.05	5.70	2.01	2.0	3.0	0.9926
UNIV TIME*SCHOOL(GRADE)	20.10	41.80	6.70	1.74	3.85	3.0	24.0	0.0222
UNIV SCHOOL(GRADE)	17.70	70.60	5.90	2.94	2.01	3.0	24.0	0.1600
UNIV CASES(GRADE,SCHOOL)	70.50	41.80	2.96	1.74	1.59	24.0	24.0	0.1032
UNIV GRAND MEAN	1972.27	41.80	1972.27	1.74	1132.40	1.0	24.0	0.0
UNIV TIME*SCHOOL(GRADE)	20.10	41.80	6.90	1.74	3.85	3.0	24.0	0.0222
UNIV CASES(GRADE,SCHOOL)	70.50	41.80	7.96	1.74	1.69	24.0	24.0	0.1032
UNIV TIME*CASES(GRADE,SCHOOL)	41.80	***	1.74	***	***	24.0	***	***

AN ASTERISK (\*) INDICATES IF APPROPRIATE ERROR TERM CANNOT BE FOUND. IF SO, RESIDUAL IS USED.

APPENDIX 4C TABLE IXa - MULTIPLE EVENTS FACTOR

4 MAR 86 ansys for behaviour observation, nested design  
 15:57:47 University of Alberta

PART OF MODEL: GRAND MEAN

FREQ.: 60  
 SCORE12 5.850

PART OF MODEL: TIME

TIME TIME1 TIME2  
 FREQ.: 30 30  
 SCORE12 5.630 4.100

PART OF MODEL: GRADE

GRADE LEVEL1 LEVEL2 LEVEL3  
 FREQ.: 20 20 20  
 SCORE12 5.630 4.200 5.750

PART OF MODEL: GRADE\*TIME

GRADE LEVEL1 LEVEL2 LEVEL3 LEVEL4  
 TIME TIME1 TIME2 TIME3 TIME4  
 FREQ.: 10 10 10 10 10  
 SCORE12 5.630 5.600 5.830 5.400 6.100

PART OF MODEL: SCHOOL (GRADE)

SCHOOL LEVEL1 LEVEL2 LEVEL3 LEVEL4  
 LEVEL1 LEVEL2 LEVEL3 LEVEL4  
 FREQ.: 10 10 10 10  
 SCORE12 5.800 5.400 6.100 5.0 6.500

PART OF MODEL: TIME\*SCHOOL(GRADE)

SCHOOL LEVEL1 LEVEL2 LEVEL3 LEVEL4  
 LEVEL1 LEVEL2 LEVEL3 LEVEL4  
 TIME TIME1 TIME2 TIME3 TIME4  
 FREQ.: 5 5 5 5  
 SCORE12 5.200 6.400 6.0 6.600 5.800 4.800 6.400 6.400 5.200 6.0

PART OF MODEL: GRADE

GRADE LEVEL3  
 SCHOOL LEVEL2  
 TIME TIME2  
 FREQ.: 5  
 SCORE12 7.0

APPENDIX 4d TABLE IXb

4 MAR 86 anova for behaviour observation, nested design  
 15:57:47 University of Alberta

HIERARCHICAL SUMMARY TABLE OF F-RATIOS FOR: SCORE12

TYPE	PART OF MODEL	SSH	SSE	MSM	MSE	F-RATIO	DFM	DFE	PROB
UNIV	GRADE	3.90	12.25	1.95	4.08	3.48	2.0	3.0	C.6606
UNIV	SCHOL(GRADE)	12.25	65.3	4.08	2.71	1.51	3.0	24.0	C.2379
UNIV	TIME	3.75	7.85	3.75	2.62	1.43	1.0	3.0	C.3172
UNIV	GRADE*TIME	1.90	7.85	0.95	2.62	3.35	2.0	3.0	C.7224
UNIV	TIME*SCHOL(GRADE)	7.85	49.3	2.52	2.36	1.28	3.0	24.0	0.3032
UNIV	SCHOL(GRADE)	12.25	65.0	4.08	2.71	1.51	3.0	24.0	C.2379
UNIV	CASES(GRADE,SCHOL)	65.0	49.3	2.71	2.04	1.33	24.0	24.0	C.2470
UNIV	GRAND MEAN	2053.35	49.3	2053.35	2.04	5.72	1.0	24.0	0.0
UNIV	TIME*SCHOL(GRADE)	7.85	49.0	2.62	2.04	1.28	3.0	24.0	C.3032
UNIV	CASES(GRADE,SCHOL)	65.0	49.0	2.71	2.04	1.33	24.0	24.0	C.2470
UNIV	TIME*CASES(GRADE,SCHOL)	49.3	49.3	2.04	2.04	1.00	24.0	24.0	0.0000

AN ASTERISK (\*) INDICATES IF APPROPRIATE ERROR TERM CANNOT BE FOUND. IF SO, RESIDUAL IS USED.



APPENDIX 4e TABLE Xa - BODY POSITION

4 MAR 76 ANOVA for behaviour observation, nested design  
15:57:49 University of Alberta

PART OF MODEL: GRAND MEAN

FREQ.: 60  
SCORES: 6.383

PART OF MODEL: TIME

TIME TIME1 TIME2  
FREQ.: 30 30  
SCORES: 5.900 6.267

PART OF MODEL: GRADE

GRADE LEVEL1 LEVEL2 LEVEL3  
FREQ.: 20 20 20  
SCORES: 5.650 6.201 6.400

PART OF MODEL: GRADE\*TIME

GRADE LEVEL1 TIME1 LEVEL2 LEVEL3  
TIME TIME2 TIME1 TIME2  
FREQ.: 10 10 10 10  
SCORES: 5.700 5.600 5.900 6.100 6.500 6.700

PART OF MODEL: SCHOOL(GRADE)

SCHOOL LEVEL1 LEVEL2 LEVEL3  
LEVEL1 LEVEL2 LEVEL3  
FREQ.: 10 10 10  
SCORES: 6.100 5.200 6.100 6.100 5.800 5.800 7.0

PART OF MODEL: TIME\*SCHOOL(GRADE)

SCHOOL LEVEL1 LEVEL2 LEVEL3  
LEVEL1 LEVEL2 LEVEL3  
FREQ.: 5 5 5  
SCORES: 5.600 6.600 5.800 4.600 5.600 6.200 6.600 6.800 6.900 7.400

PART OF MODEL: GRADE

SCHOOL LEVEL3  
LEVEL2 LEVEL3  
FREQ.: 5 5  
SCORES: 6.600 6.600

APPENDIX 4f TABLE Xb

4 MAR 86 ANOVA for behaviour observation, nested design  
 15:57:69 University of Alberta

HIERARCHICAL SUMMARY TABLE OF F-RATIOS FOR: SCORE13

TYPE	PART OF MODEL	SSH	SSE	PSM	MSE	F-RATIO	DFN	DFE	PROB
UNIV	GRADE	6.03	11.45	3.02	3.82	0.79	2.0	3.0	C.5310
UNIV	SCHOOL(GRADE)	11.45	59.60	3.82	2.48	1.54	3.0	24.0	C.2306
UNIV	TIME	2.02	16.65	2.02	5.55	3.35	1.0	3.0	C.3892
UNIV	GRADE*TIME	1.63	16.65	0.82	5.55	0.15	2.0	3.0	C.8690
UNIV	TIME*SCHOOL(GRADE)	16.65	53.20	5.55	2.22	2.50	3.0	24.0	C.0834
UNIV	SCHOOL(GRADE)	11.45	59.60	3.82	2.48	1.54	3.0	24.0	C.2306
UNIV	CASES(GRADE,SCHOOL)	59.60	53.20	2.42	2.22	1.12	24.0	24.0	C.3015
UNIV	3WAYS MEAN	2270.42	53.20	2220.42	2.22	1001.69	1.0	24.0	C.C
UNIV	TIME*SCHOOL(GRADE)	16.65	53.20	5.55	2.22	3.50	3.0	24.0	C.0834
UNIV	CASES(GRADE,SCHOOL)	59.60	53.20	2.48	2.22	1.12	24.0	24.0	C.3015
UNIV	TIME*CASES(GRADE,SCHOOL)	53.20	53.20	2.22	2.22	1.00	24.0	24.0	0.0000

AN ASTERISK (\*) INDICATES IF APPROPRIATE ERROR TERM CANNOT BE FOUND. IF SO, RESIDUAL IS USED.



APPENDIX 4h TABLE XIb

4 MAR 26 anova for behaviour observation, nested design  
 15:57:52 University of Alberta

HIERARCHICAL SUMMARY TABLE OF F-RATIOS FOR: SCORE14

TYPE	PART OF MODEL	SSH	SSE	MSH	MSE	F-RATIO	DFM	DFE	PROB
UNIV GRADE		2.70	18.10	2.35	5.03	2.35	2.0	3.0	0.9447
UNIV SCHOOL(GRADE)		19.10	85.60	6.03	3.57	1.87	3.0	24.0	0.1954
UNIV TIME		0.07	8.10	0.07	2.70	3.02	1.0	3.0	0.8851
UNIV GRADE*TIME		2.03	8.10	1.02	2.70	3.33	2.0	3.0	0.7147
UNIV TIME*SCHOOL(GRADE)		8.10	72.90	2.70	3.03	3.89	3.0	24.0	0.4604
UNIV SCHOOL(GRADE)		19.10	85.60	6.03	3.57	1.49	3.0	24.0	0.1954
UNIV CASES(GRADE,SCHOOL)		85.60	72.90	3.57	3.03	1.15	24.0	24.0	0.3474
UNIV SBAN) MEAN		2232.60	72.90	2232.60	3.03	735.02	1.0	24.0	0.0
UNIV TIME*SCHOOL(GRADE)		8.10	72.90	2.70	3.03	0.89	3.0	24.0	0.4604
UNIV CASES(GRADE,SCHOOL)		85.60	72.90	3.57	3.03	1.15	24.0	24.0	0.3474
UNIV TIME*CASES(GRADE,SCHOOL)		72.90	85.60	3.03	3.03	0.00	24.0	24.0	0.00

AN ASTERISK (\*) INDICATES IF APPROPRIATE ERROR TERM CANNOT BE FOUND. IF SO, RESIDUAL IS USED.

APPENDIX 41 TABLE XIIa - PROCESS DURATION

4 MAR 86 ansys for behaviour observation, nested design  
 15:57:53 University of Alberta

PART OF MODEL: GRAND MEAN

FREQ.: 60  
 SCORES 6.317

PART OF MODEL: TIME

TIME TIME1 TIME2  
 FREQ.: 30 30  
 SCORES 6.467 6.167

PART OF MODEL: GRADE

GRADE LEVEL1 LEVEL2 LEVEL3  
 FREQ.: 20 20 20  
 SCORES 6.400 6.253 6.300

PART OF MODEL: GRADE\*TIME

GRADE LEVEL1 LEVEL2 LEVEL3  
 TIME TIME1 TIME2 TIME1 TIME2 TIME1  
 FREQ.: 10 10 10 10 10 10  
 SCORES 7.0 5.800 5.700 6.800 6.700 5.900

PART OF MODEL: SCHOOL(GRADE)

GRADE LEVEL1 LEVEL2 LEVEL3  
 SCHOOL LEVEL1 LEVEL2 LEVEL1 LEVEL2 LEVEL1  
 FREQ.: 10 10 10 10 10 10  
 SCORES 7.200 5.600 6.400 6.100 5.200 7.400

PART OF MODEL: TIME\*SCHOOL(GRADE)

GRADE LEVEL1 LEVEL2 LEVEL3  
 SCHOOL LEVEL1 LEVEL2 LEVEL1 LEVEL2 LEVEL1  
 TIME TIME1 TIME2 TIME1 TIME2 TIME1  
 FREQ.: 5 5 5 5 5 5  
 SCORES 7.600 6.800 6.400 6.800 5.800 7.000

GRADE LEVEL3  
 SCHOOL LEVEL2  
 TIME TIME1  
 FREQ.: 5 5  
 SCORES 6.600 5.200

GRADE LEVEL2  
 SCHOOL LEVEL1  
 TIME TIME1  
 FREQ.: 5 5  
 SCORES 6.600 5.200

GRADE LEVEL1  
 SCHOOL LEVEL1  
 TIME TIME1  
 FREQ.: 5 5  
 SCORES 5.500 5.200

GRADE LEVEL2  
 SCHOOL LEVEL1  
 TIME TIME1  
 FREQ.: 5 5  
 SCORES 5.500 5.200

GRADE LEVEL3  
 SCHOOL LEVEL1  
 TIME TIME1  
 FREQ.: 5 5  
 SCORES 5.500 5.200



APPENDIX 4J TABLE XIIB

4 MAR 66 ANOVA for behaviour observation, nested design  
 15:57:55 University of Alberta

HIERARCHICAL SUMMARY TABLE OF F-RATIOS FOR SCORES

TYPE	SSH	SSE	MSH	MSE	F-RATIO	DFH	DFE	P-VALUE
UNIV GRADE	0.23	37.45	0.12	12.48	0.01	2.0	3.0	C.9907
UNIV SCHOOL(GRADE)	37.45	85.80	12.45	3.57	3.49	3.0	24.0	C.0311
UNIV TIME	1.35	4.05	1.35	1.35	1.0	1.0	3.0	C.3910
UNIV GRADE*TIME	15.10	4.05	7.55	1.35	5.57	2.0	3.0	C.0973
UNIV TIME*SCHOOL(GRADE)	4.05	55.0	1.35	2.29	3.57	3.0	24.0	C.0221
UNIV SCHOOL(GRADE)	37.45	85.80	12.45	3.57	3.49	3.0	24.0	0.0311
UNIV CASES(GRADE,SCHOOL)	85.80	55.0	3.57	2.29	1.55	24.0	24.0	C.1415
UNIV GRADE*MEAN	2394.02	55.0	2394.02	2.29	1044.66	1.0	24.0	C.C
UNIV TIME*SCHOOL(GRADE)	4.05	55.0	1.35	2.29	3.57	3.0	24.0	C.0221
UNIV CASES(GRADE,SCHOOL)	85.80	55.0	3.57	2.29	1.55	24.0	24.0	C.1415
UNIV TIME*CASES(GRADE,SCHOOL)	55.0	55.0	2.29	2.29	1.0000	24.0	24.0	.....

AN ASTERISK (\*) INDICATES IF APPROPRIATE ERROR TERM CANNOT BE FOUND. IF SO, RESIDUAL IS USED.

## APPENDIX 5a- GRADE ONE TEST AND ANSWER/SCORE SHEETS

Grade One test questions: given orally in Ukrainian and in English

1. Clap the steady beat while I play this music. (Качечка-прачечка)

2. Beats may be grouped in 2's or 3's. Can you tell me how the beats are grouped in these songs? (Я лисичка

Пам'ятає гори сміє

Качечка-прачечка

Взяв би я бандуру)

3. Stamp the strong beats and clap the weak beats. (Чижиків до сон, сон)

4. Clap these rhythms

form A

|| □ |  
| ξ □ |

form B

□ | □ |  
□ □ | ξ

5. Echo clap these rhythms while I tap the steady beat.

form A

□ | □ |  
beat | | | |  
□ □ | |  
beat | | | |

form B

| □ | |  
beat | | | |  
□ □ □ |  
beat | | | |

6. Read and clap these rhythm patterns:

form A

| | □ |  
| ξ | |

form B

□ □ | |  
ξ | □ |

SCORE SHEET I A

STUDENT \_\_\_\_\_

APPENDIX 5b

1. S M N

2. S N

S N

S N

S N

3. S M N

4. S M N

S M N

5. S M N

S M N

6. S M N

S M N

#2 answers: 2  
3  
2  
3



SCORE SHEET I B

APPENDIX 5c

STUDENT \_\_\_\_\_

1. S M N

2. S N

S N

S N

S N

3. S M N

4. S M N

S M N

5. S M N

S M N

6. S M N

S M N

#2 ANSWERS: 3  
2  
3  
2

APPENDIX 6a - GRADE TWO TEST AND ANSWER SHEETS

Grade two - test

7. Play this rhythm pattern while I play a song (Шутилко а.а)

Form A: 1 2 1 2  
 Form B: π | π |

8. Play these rhythms while I play the steady beat.

form A	π	π   π	π π π	1 2 π
beat				
form B	π π	π   2	1.	1 2 π
beat				

9. Write the rhythm you hear. Use 1, π, 2, and d.

form A: 1 d, d π |, 1 1 2 |, 1 d |  
 form B: π π d, 1 π | 2, 1 1 π |, d | |

10. What do you hear? Draw <sup>a circle</sup> around the rhythm that I clap.

form A: 1 | π |, 1 | π |, d, 1 1 1 1, 1 1 1 } π π 1 1  
 form B: 1 π π |, 1 π π |, 1 π | } 1 1 1, 1 1 1 } π π 1 1

11. Tell whether the beats are grouped in 4's, 3's, or 2's according to the accented beats.

form A: (Подосаяночка 1 1 1 1 4)  
 form B: (Гон Гон козучю 1 1 3/4)

12. Sing this song and accent the same notes that I accent.

A - Гей там на гори B - Мати доню колисаа

APPENDIX 6b

Write the rhythm you hear. Use I, П, ξ, and d

Пишіть ритм. Вживайте I, П, ξ, і d

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

What do you hear?

Что вы слышите?

1. | ↓ | □ | | □ | ↓ | |

2. | | □ ↓ | | □ ↓ | ↓ |

3. d. | ↓ | ↓ | | d. | ↓ | |

4. | ↓ | | □ ↓ | □ ↓ | ↓ | | ↓ | ↓ | □ ↓ | □ ↓ | ↓ |

SCORE SHEET I A

APPENDIX 6d

STUDENT \_\_\_\_\_

7. S M N

8. S M N

S M N

9. S M N

S M N

S M N

S M N

10. S N

S N

S N

S N

11. S M N

## APPENDIX 6e

ИВ

Write the rhythm you hear. Use l, П, э, and d

Пишіть ритм. Вживайте l, П, э, i d

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

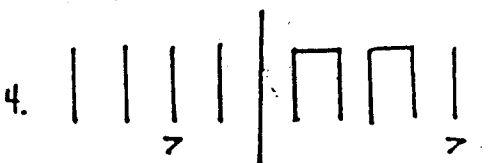
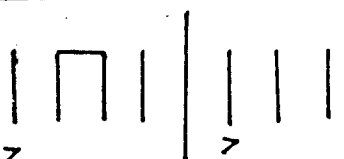
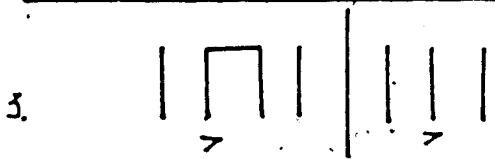
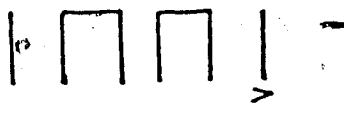
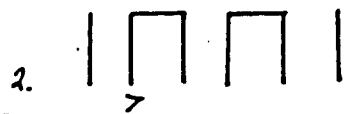
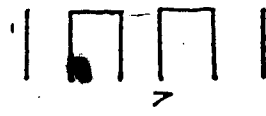
4. \_\_\_\_\_

## APPENDIX 6f

II B

What do you hear?

Що ви чуєте?



SCORE SHEET II B

APPENDIX 6g

STUDENT \_\_\_\_\_

7. S M N

8. S M N

S M N

9. S M N

S M N

S M N

S M N

10. S N

S N

S N

S N

11. S M N







SCORE SHEET III A

STUDENT \_\_\_\_\_

APPENDIX 7c

13. S M N  
S M N  
S M N  
S M N

14a) S N  
S N

b)  $\textcircled{i}$  S N  
 $\textcircled{e}$  S N

15b) S M N  
S M N  
S M N

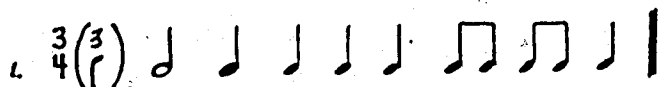
b) S N  
S N  
S N

## APPENDIX 7d

III B

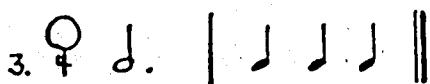
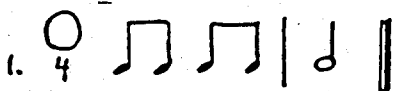
Read the time signature, then draw bar lines where they are needed.

Прочитайте розмір і напишіть тактові риси де потрібно.



What is the correct time signature of each rhythm? Write the correct number in the circle.

Який розмір?



SCORE SHEET III B

STUDENT \_\_\_\_\_

APPENDIX 7e

13. S M N  
S M N  
S M N  
S M N

14. a) S N  
S N  
b) i) S N  
ii) S N

15. a) S M N  
S M N  
S M N

b) S N  
S N  
S N

APPENDIX 8 - SCORESHEET FOR OBSERVATION STUDY

School \_\_\_\_\_  
 Class \_\_\_\_\_  
 Date \_\_\_\_\_  
 Time \_\_\_\_\_

Observer \_\_\_\_\_

time	0	30	1	30	2	30	3	30	4
S <sub>1</sub>	A								
	B								

	4	30	5	30	6	30	7	30	8
C									
	D								
	E								

S <sub>2</sub>	A								
	B								

C									
	D								
	E								

S <sub>3</sub>	A								
	B								

C									
	D								
	E								

S <sub>4</sub>	A								
	B								

C									
	D								
	E								

S <sub>5</sub>	A								
	B								

C									
	D								
	E								

- A- Process-Product Dynamic (Acts→consequences)
- B- Multiple Events Factor
- C- Body Position (Attitude Dynamic)
- D- Tool use Dynamic
- E- Span (Length of Process)(Quality of Attending)

APPENDIX 9aTeacher Questionnaire

1. a) Have you compared the Ukrainian Bilingual Music Program with the Alberta Education Curriculum Guide for Elementary Music?

b) If so, what major differences do you see?

2. a) What features are most important to you in a curriculum?

b) In a curriculum guide?

3. Which features of the Ukrainian Bilingual Music Program are the strongest and most helpful to you as a teacher?

Specifically address some of the following points:

a) conceptual approach

b) strategies

c) skill-building activities incorporated into the concept units

d) song lists

e) terminology used



f) inservice program over the last five years

4. a) What are the weakest aspects of the program?

b) How do you feel these can be improved?

c) Would you be willing to make such recommendations to your school board?

5. a) When teaching music, do you use the conceptual approach as outlined in the program guide?

b) Do you follow the strategies as suggested and culminating in an evaluative activity which determines the children's understanding?

c) If not, outline the approach that works best for you.

6. Which teaching strategies or techniques do you feel suit you and your class the best?

APPENDIX 9bSummary of Teachers' Responses to Questionnaire

1. a) Have you compared the Ukrainian Bilingual Music Program with the Alberta Education Curriculum Guide for Elementary Music?

response 1 - Yes.

2 - Yes.

3 - Yes.

4 - No. I have not compared these exhaustively, I would assume your guide follows it.

- b) If so, what major differences do you see?

response 1 - No major differences.

2 - The English curriculum does not cover as much material as the Ukrainian guide and for this reason, it also goes at a slower pace.

3 - No response.

4 - Ukrainian guide is obviously focusing on Ukrainian music and culture.

2. a) What features are most important to you a) in a curriculum?

response 1 - Concentrating on skills appropriate for that grade level.

- 2 - The curriculum must be interesting and informative. It must be geared to the children's level and at its culmination must have taught whatever it set out to, and the children have totally assimilated it.
- 3 - Building up skills in a concrete fashion - from the components to a whole - also enhancing music knowledge, skills and enthusiasm.
- 4 - Objectives and concepts clearly stated.

b) In a curriculum guide?

- response
- 1 - A clear explanation of skills to be achieved; - a chart to show the progression from grade to grade, a logical organization of concepts that are related to each other.
  - 2 - The guide must be well laid out with very clear objectives. It must give the teacher ideas for planning well-structured lessons and also provide a variety of different ideas and activities to use at the teacher's discretion. It must also have good lists of materials and resources that are very accessible to the teacher.
  - 3 - Would like to see complete lesson plans with anything needed listed at the beginning with suggestions for time allotment for the concept.
  - 4 - Concepts and skills should be clearly listed; lists of additional materials, books; suggested teaching strategies.

3. Which features of the Ukrainian Bilingual Music Program are the strongest and most helpful to you as a teacher? Specifically address some of the following points:

a) conceptual approach

response 1 - It seems to work very well in the classroom. I wouldn't want to see this changed at all.

2 - The program is well laid out so that if the teacher follows it closely and the children assimilate steadily there should be a very good and clear basic understanding of music.

3 - This approach is quite interesting as it does let one completely cover the concepts of Rhythm, Harmony, etc. In the Rhythm unit I like the set-up for the Rhythm instruments. The introductions are very good - background well set-up - much better than EMF.

4 - Good, makes for continuity from lesson on to lesson.

b) strategies

response 1 - I really appreciate the variety of methods that are given to teach a concept (i.e. using the board, instruments, clapping, singing, etc.).

2 - The strategies are presented so that they start from simple form and work up to teaching the children the objective.

- 3 - These are quite good at giving a variety of activities to choose from - games, marching, etc. - learning the rhythm before the song words, internalizing the concept.
- 4 - Well defined. Good starting point, especially for teachers who aren't comfortable teaching music.

c) skill-building activities incorporated into the concept units

response 1 - No response.

- 2 - The activities are well-structured and presented so as to get the most out of the children and also provide the teacher with the opportunity to observe individual children.
- 3 - I Like the writing activities that have the children write the rhythms from the songs already known, training and recognizing the songs.
- 4 - Strategies and skills give the teacher ideas on how to further explore/expand concepts using different songs.

d) song lists

response 1 - very helpful however there are some difficulties in finding music.

- 2 - These are many and varied so that there is a lot of choice for teachers as to what fits best and is most appropriate for her level.

- 3 - Relatively good - when the notes can be located, wish there was a child's book with the suggested songs in it. (Author's note: Such a book was sent to each school by Alberta education approximately two years prior to this study).
- 4 - Excellent list; teachers may make substitutions if music is not available. Unfortunately, many songs listed are found in obsolete anthologies. Set-up some sort of lending library through Alberta Education or school boards?

e) terminology used

- response 1 - I find the vocabulary all right but I can see some people (with little music background) having difficulties.
- 2 - There is quite a bit of terminology presented so that the teacher may be able to pick and choose what best suits her class and is most easily learned.
  - 3 - Good, but I find that one has to have a large music background to handle this - you must be very well prepared.
  - 4 - Terminology has been well researched. A music specialist should have no problems incorporating terms into their vocabulary. However, regular classroom teachers may have problems, especially if they are not comfortable with English and Italian music terminology.

f) inservice program over the last five years

response 1 - I would have benefited from more inservices -

especially if they were concentrated on the grade 3 level and the skills that should be achieved.

2 - The inservices have been good because they did give us the opportunity to become acquainted with the expectations for each grade level.

3 - The two programs I attended were excellent but very scarce.

4 - Inservices were informative for regular classroom teachers, but a teacher with a lot of music background would find them too general, basic.

4. a) What are the weakest aspects of the program?

response 1 - I would like a time line, to know approximately how long each area should take, then I could see if I am spending too long on one area and not stressing another area enough. Language is difficult to transfer to children's understanding.

2 - First off, I feel that this program is very extensive and a bit too much for a grade one class. Secondly, I also feel that to be able to properly and comfortably teach the program you must have some form of musical background and not just be able to play piano but also have some training in theory -



even during the inservices it is assumed that we all have a musical background. Also, to be able to get through this program in a year, there is definitely not enough time provided to teach the children the many songs needed for our celebrations and concerts (being in the Separate system we have about 8 celebrations a year and one major concert which takes several months of preparation). The program is also structured so that no opportunity is given to teach children anything but Ukrainian songs (this is a bilingual program).

- 3 - The program covers a lot of ground - need to omit some concepts so that time allotted to celebrations and concerts can be used. Need some type of ready-made tests - mainly to see how the children have grasped the concepts. Need some taped music for music appreciation, also music inserts for the pages. Would like some of the patterns put on transparencies. In grade 3 if the students have had different teachers - some of the grade 3 program is above our heads.
- 4 - There are few Ukrainian music specialists; many regular classroom teachers feel inadequate teaching the program. Many schools lack anthologies of the songs.

b) How do you feel these can be improved?

response 1 - No response.

2 - First, maybe the program can be condensed so as to begin with only teaching beat and rhythm in grade one, or give an introduction to beat and rhythm in kindergarten, then use it as a review in grade one and then spend more time on harmony, form, expression, and music appreciation. Second, either have one or two teachers who have extensive music backgrounds teach everyone's music, or, have many more inservices (for individual grade levels) to thoroughly acquaint the teachers with the program. There should be opportunities throughout the program (especially in the Separate system) to teach music needed for our many concerts and celebrations and also some English (possibly only seasonal) songs.

3 - Some sample exams in the guide - an actual sample lesson included and format (Author's note: A sample lesson for each grade is part of the curriculum guide). More inservices with this program - by the second one I finally felt more secure with it. Need some "Action Songs" and a child's booklet for the student.

4 - Have a Ukrainian music consultant, or a regular consultant visit classrooms to observe and also to instruct. Assist teachers in organizing long range

plans and lesson plans so that objectives, skills and concepts flow - there is some consistency.

c) Would you be willing to make such recommendations to your school board?

response 1 - No response.

2 - Yes.

3 - Yes - especially the need for more inservices, need for tapes for the music program - grade one - three, with some music appreciation thrown in on the tapes.

4 - I don't know if the board would listen, but yes.

5. a) When teaching music, do you use the conceptual approach as outlined in the program guide?

response 1 - Yes.

2 - Yes.

3 - Not always. I use this with the EMF approach from our board program, however have incorporated more of this program as I go on - using the language. Use the concept to introduce things.

4 - I use it for planning "series of lessons", although not all concepts are taught in the order given. Often, if the opportunity arises in a lesson, I may skip to another concept.

b) Do you follow the strategies as suggested and culminating in an evaluative activity which determines the children's understanding?

response 1 - Some activities I omit because of not enough time.

I have difficulty in evaluating the children's progress - I would like the guide to give a little more direction in what procedures to follow (as well as how much time should be spent before evaluations done).

2 - Yes.

3 - As much as possible to ascertain whether we can go further - or have to re-think some of the lessons. Some days everything does not work as planned.

4 - Basically, yes, although formal evaluations are not given at the end of every lesson. If most students show an understanding of the concept, I feel the lesson has been successful.

c) If not, outline the approach that works best for you.

response 1 - No response.

2 - No response.

3 - Usually follow this approach - Rhythm activity - introduce the new song - rhythm section - words (short time) - go onto a review of songs already known. As much as possible I explain the words, so that the songs have a meaning. If dance or mime can

be incorporated it is used as the children pick up these songs almost effortlessly.

- 4 - Often we work on the words to the songs separately, as the words give the children the most problems. Work on rhythm, phrases, repeating melodies, rhythms, etc.

6. Which teaching strategies or techniques do you feel suit you and your class the best?

response 1 - The children learn the most, I find, by doing (i.e. clapping, playing instruments, etc.) however, they become very active and need time to sit and listen, so I find a balance of techniques (as offered in the guide) very appropriate.

2 - I follow the curriculum guide to the tee, because I don't have enough formal music training to know how to do it differently. I do spend a lot of time though, teaching songs for celebrations or concerts and I also like to teach the children several English songs.

3 - Movement with the class, using our body parts or wholes. Fun things thrown in once in awhile. Including some seasonal songs - religion songs, and some English songs. With some of the better classes we even made up and composed our own songs.

4 - Rhythm work - echo clapping, question-answers rhythms. I use a fair amount of solfege to learn melodies, echo sing. Notation of rhythms. Notation of notes and melodies on floor staff. Rhythm instruments - hand held. Kids have problems playing on Orff instruments in ensemble situations. It's frustrating for everyone.