DOCUMENT RESUME

ED 119 837 PS 008 400

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TITLE Music Education for the Very Young Child. Report of the International Seminar on Research in Music Education (4th, School of Music, University of Canterbury, Christchurch, New Zealand, August 19-23, 1974).
INSTITUTION New Zealand Council for Educational Research, Wellington.
PUB DATE 75
NOTE 50p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage
DESCRIPTORS Comparative Education; Learning Processes; *Music Education; Perception Tests; Personality; *Preschool Education; *Research; *Seminars; Teaching Methods
IDENTIFIERS *New Zealand (Christchurch)

ABSTRACT

This report contains the text of the opening address, the text of the principal paper, and abstracts of 18 background papers discussed at the Fourth International Seminar on Research in Music Education. The seminar dealt with the state of present research concerning music education for children up to age 5. The papers covered such topics as: research with children, the learning process, ability and teaching methods, perception tests, and comparative music education. Also included were recommendations for future research. (JMB)

Music Education for the Very Young Child

Report of the Fourth International Seminar on Research in Music Education

Music Education for the Very Young Child

Report of the Fourth International Seminar on Research in Music Education held at the School of Music, University of Canterbury, Christchurch, New Zealand.

19-23 August 1974

Studies in Education. No. 25

New Zealand Council for Educational Research, Wellington, 1975

Preface

July and August 1974 were most important months for music education in areas antipodean to the western world. Three important meetings took place. The UNESCO/ISME Seminar in Tokyo, the Eleventh International Conference of ISME in Perth and the Fourth International Seminar on Research in Music Education in Christchurch, possessed different functions, different purposes and may possibly boast different achievements.

Tokyo had in mind penetrating the mystique of the art, the craft, the training and vocational climate of the professional musician, through the experience of variously oriented experts. Perth set up a broad, and fashionable, topic — inter-disciplinary study — to encourage disparate approaches from a variety of interested parties at the primary, secondary and tertiary levels of music education. Christchurch principally considered the state of present achievement in research as it concerns music and the child up to the age of five. What intrigued those of us fortunate enough to attend all three occasions was the manner in which the aspirations and purposes of each meeting became diluted by, and entangled with, the considerations of the other meetings. The UNESCO/ISME Seminar began by considering the professional and ended by resolving tacitly that the young child held the key to many of the problems associated with professional life today.

In Christchurch, the intention was more precise and fundamental. The gathering was of specialists in a particular field. Its achievements are the subject of this report. Undoubtedly, New Zealand was honoured by being selected to host a meeting of international researchers, especially since its research tradition in music is small. But, as the Minister of Education indicated in opening the proceedings, our concern with music and with the very young child has been as lively as our overall concern for education. Those of us who had to do with the organization of the seminar pressed for the basic theme that was chosen out of an awareness of our own national needs as well as by way of international acknowledgement of the fact that in music 'the child is father of the man'.

Kurt Eicke, Chairman of ISME's Research Commission, steered the seminar with geniality and efficiency through a week of hard work and mutual stimulation. Clearly manifested was the principle that research is not only for researchers **per se**. It is for practitioners. The feeling possessed by the

innovator which impels him to hand on the torch of which he is the bearer is, in fact, research. It is the desire to perpetuate the tradition of search for knowledge. The vocation for teaching and the true spirit of teaching underlie the will to research. As has been written, 'Where there is no zeal for research there is no vitality for teaching'.

Exaggerated though such a statement may be, those of us who attended the Fourth Research Seminar could well be excused for adopting it as a motto for the occasion. There was zeal. There was vitality. As this report, I trust, demonstrates, there was no bigotry.

John Ritchie

Editor's Note

In May 1975 it was found necessary to reassess completely the original concept and format of this report of the Fourth International Seminar on Research in Music Education. As a result of this, the request from the New Zealand Council for Educational Research for an edited version of Dr Zimmerman's Principal Paper together with abstracts of background papers to the Seminar became an urgent matter. It was soon realised that for the report to be relevant it should be produced as quickly as possible and it was considered to be impracticable to obtain participants' approval of the revised form of their material as presented here.

Acknowledgement must be made to Mr John Watson (Director, NZCER) who accepted the revised format and to staff of NZCER, Wellington, who have helped in every way to publish this report with a minimum of delay.

John M. Jennings

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Opening Address to the Seminar

Hon. P.A. Amos
Minister of Education

Many splendid words have been spoken and written about the beauty of music and its value to society. I am sure you are as aware as I am of the power of music to enrich human experience, and of the feelings of enjoyment and deep satisfaction that listening to and partaking in music can create. Considering New Zealand's small population and our relative isolation from some of the largest and most developed countries, we have reason to be proud of the substantial progress being made in music education at present, particularly in our schools. Let me say, this is not before time.

For far too long, private music tuition was confined to piano or violin lessons for the fortunate few and singing for the remainder in our schools. But over the last decade a transition has taken place in our schools, albeit a gradual one, from a concentration solely on a few performing skills to one promoting musical understanding and appreciation. Of course I am glad to say performing skills are also receiving much more emphasis but no longer at the expense of musical appreciation.

Within the field of early childhood education, music is not taught formally, but it features as a very active and prominent part of the day's activities. Music is seen as a relaxation as well as a stimulation, and dancing, singing, clapping and tapping either on instruments or other objects, are all enjoyed freely and should introduce young children to music as an enjoyable activity.

Within our primary schools, perhaps the first development was seen as an attempt to use 'music as entertainment' with the accent on rote singing, and percussion band playing. In addition, rather too many teachers tended to rely on the music broadcast as a total class programme rather than a supplementary one. Later, schemes from abroad were introduced such as the Carl Orff, Zoltan Kodaly, and the Mary Helen Richards schemes.

The present primary music syllabus and music handbook have absorbed all these schemes and have led naturally to the development of a new scheme based on the spiral curriculum and the conceptual approach to music learning. You will know that the core of our primary scheme, then, is a series of structured units of work in four stages based on music objectives. More than 70 units, 25 song charts, and 4 tapes and cassettes of the

accompaniments of 60 songs contained in the units have been recorded. This is to assist primary teachers with limited practical skills both to use the units effectively and to gain confidence in handling their classes.

Music education has not been forgotten in our secondary schools either. The secondary school music revision committee last year produced a guideline statement which recognized the importance of aesthetic education in the secondary school curriculum and recommended a programme leading to musical understanding through perception. Musical discrimination and the formation of values, the committee believes, are best achieved through an aural approach.

Another recommendation of the committee was that music in the fourth form be offered as an aesthetic option. Of course, it is envisaged that students sitting school certificate in music will be drawn mainly from those who have opted to take music at the fourth form level. However, I am glad to say that provision will also be made for a system of electives at the 5th, 6th and 7th form levels for those not sitting examinations. In addition, a fully related arts course has been suggested for forms 6 and 7. All of you here today will, of course, appreciate the advantages of combining a study of music and the other arts.

So far, I have outlined to you the provisions for school music within school hours. I would like now to mention some out-of-school activities. Compared with similar schemes overseas free, out of hours, instrumental tuition for primary school children in New Zealand is in its infancy. But steps are being taken to increase the scope of the scheme for the future.

The group tuition provided through these classes as well as introducing many children to the playing of an instrument, also prepares children for entry into secondary school orchestras in many districts, the group tuition is continued by itinerant music teachers who are employed to teach a group of several schools. I am glad to say most secondary schools employ part-time teachers for orchestral and band instruments. In addition my Department makes available subsidised grants to set up new orchestras and to purchase orchestral instruments for secondary departments.

Probably our most successful scheme for training orchestral players is here in Christchurch. The Christchurch School of Instrumental Music, founded in 1955, has had notable success in providing instrumental tuition. So far, approximately 1400 children have had the opportunity to graduate from beginner status to playing in a full orchestra of considerable technical ability. As well as orchestral tuition, the school teaches all the instruments of the orchestra — strings, woodwind, brass and the recorder. Many of the players have gained places in the National Youth Orchestra, the Christchurch

Symphony Orchestra and the New Zealand Symphony Orchestra, now of world class standard.

Another feature of our musical scene I would like to mention is the secondary school orchestral holiday courses. These are held twice each year and provide an opportunity for secondary pupils from all over New Zealand to perform together and achieve a high standard. Only the best students are accepted for these courses and competition for membership is keen. Some of the more able members gain places in the National Youth Orchestra or are accepted as NZSO orchestral trainees. I am sure those of you who heard the Schola Musicum play in Perth will appreciate the high standard of performance attained by these trainees. Again membership of the National Youth Orchestra can lead to a place in the New Zealand Symphony Orchestra.

Let me pass now from the large music organisational structure to the small one. Per head of population, the New Zealand chamber music concert-going public is the highest in the world. This record is due, in no small part, to the work of the Music Federation of New Zealand who, among a number of activities, maintain a high interest, by arranging tours for both New Zealand artists and first rate overseas ensembles. The Federation also organizes a chamber music competition for chamber music groups in secondary schools. This takes place annually, preceded by area finals.

Allow me to leave chamber music and go on to the **big** sound of brass bands now. I am sure our New Zealander's enthusiasm for brass bands is well known to you. The many high quality bands in evidence all over the country in large towns and small indicates the degree of interest. The national brass band championships are an important feature in the band world and are keenly contested. Particularly well known is the National Brass Band which has, of course, won the world championship on two occasions and is at present in Canada where, as part of the tour, it will play at the opening of the Toronto exhibition. We may be a small country but we have made our mark in the music world.

Back within the realms of my department, may I mention a few developments. The year 1959 saw the appointment of the first departmental music adviser. By 1964, one district music adviser had been appointed to each of the ten education board districts. Without a doubt, these advisers have made a significant and important contribution to school music. Their principal duties include guiding and stimulating the development of a progressive music programme in each district, assisting classroom teachers in practical ways, and directing in-service training courses for primary and secondary teachers. In the last decade, the music advisers have been

responsible for organizing over 1,000 of these courses.

Ladies and gentlemen, I am proud of the way our music education has progressed over the last decade. But we must **not** be complacent. We have a very long way to go before the true importance of music is seen by all our communities. To do this, our schools must widely initiate and encourage interest and appreciation of music.

It is my very great pleasure both to welcome the overseas participants to our country and officially to declare this Seminar open. I trust that your discussions will be fruitful.

Christchurch
19th August, 1974

Section I: Principal Paper of the Seminar

Research in Music Education with Very Young Children

Marilyn P. Zimmerman

Numbers in the text refer to notes at the end of the paper.

Introduction

Developmental psychologists and educators have expressed grave concern that the most crucial years in the intellectual development of children have been neglected — those years of infancy and early childhood. This concern in the United States of America has been met with government support for head-start programmes especially for children from lower income and minority groups, with a proliferation of pre-schools and with Montessori schools.

In March 1974 a UNESCO Conference on Early Childhood Education was held on the Urbana-Champaign campus of the University of Illinois. Four areas of agreement among the participants were reached, namely:

(a) the need for specifically-structured curricula with provision for self-directed learning;
(b) the need for both broad and detailed exposure to a variety of learning experiences;
(c) the need for children to develop healthy self concepts;
(d) the value of interaction with adults in educational situations and settings.

Discussions of early childhood and primary education also often centre around controversial topics such as

(a) environmentalism **versus** genetic endowment;
(b) open **versus** traditional education;
(c) child-centred **versus** subject-centred curriculum;
(d) discovery **versus** directed learning; and
(e) responsive environment **versus** behaviour modification.

As music educators who look beyond the parochial boundaries of our own nationalistic allegiances to the universal musical development of the human family, we need to understand the relevance of these general problem areas to our specific field of music education.

Hence, the purpose of this paper is to summarize relevant research on the musical development of young children and to indicate the implications of these selected research findings for music education in early childhood. (1)

Cognitive growth and Jean Piaget

According to the developmental viewpoint, an individual is engaged in a continuous process of creative interaction with his environment. The adaptive processes of assimilation and accommodation form the opposite poles within which this interaction is structured. These invariant functions continually disrupt the equilibrium of thought and force the individual to restructure his thinking as he simultaneously assimilates the environment to himself and accommodates himself to the environment. Each new assimilation and accommodation leads to a higher level and more stable point of equilibrium until a cohesive and coherent system of thinking is developed.

Piaget, Jean, *The Child and Reality,* translated by Arnold Rosin (New York, Grossman Publishers, 1973).

Within this setting, Jean Piaget (2) has described an elegant theory of cognitive growth which views human intelligence as moving through successively higher stages from pre-operational to operational thinking. The order of stages is both organismic and experiential — organismic because they unfold systematically, and experiential because they are to some extent dependent upon environment and experience. The age levels can and do vary. Perhaps we should consider the order of stages as being organismic and the age levels as being experiential.

Musical perception in infancy

If we can agree that intellectual activity begins with a confusion of environment and self-awareness in a universe consisting wholly of perceptual images and personal activity, then musical activity begins with a confusion of environment and self-awareness in a universe consisting of aural images and personal activity. The initial responses of an infant to his world are to the sounds, textures, shapes, and colours that he finds there.

Michel, Paul, 'The optimum development of musical abilities in the first years of life', in *Psychology of Music,* vol. 1 (June 1973), pp. 14-20.

Paul Michel has described the first six months of infancy as a period of 'learning to hear'. Infants learn early to discriminate among sounds according to their pitch and timbre. (3) By approximately the age of one month, the infant shows signs of recognizing family members by their voices. As the child learns to hear, he begins to differentiate his own vocal sounds and is soon imitating the aural images and impressions from his sound environment. The infant derives pleasure from this type of activity and so tends to prolong it. (4) Ruth Fridman refers to this as 'trilling' and J. McVicker Hunt calls it the 'laling' of an infant. It is quite possible to engage in a conversation of trilling or laling with a three- or four-month-old. Indeed,

Hunt has memorable slides of just such a conversation between himself and a four-month-old child.

David Spiegler in 1967 found that a sample of 40 full-term neonates between 24 and 28 hours old were able to discriminate surprisingly minute fluctuations in rhythm patterns when observed through four periods of different auditory stimulation. Their activity levels were measured by a stabilimetre counter. The results also indicated the importance of considering qualitative stimulus gradations in infant studies. (5)

Two interesting studies have been conducted with 12 pairs of same-sex twins matched in age and sex with an equal number of singletons. The first study by Gene Simons in 1964 observed these infants, ages 9.2 months to 31.4 months, when exposed to various types of music. It is interesting to note that the twins were less responsive than the singletons. Age differences were minimal in the twins' responses, whereas the older singletons were decidedly more responsive than the younger singletons. In vocalizing, the pitch interval that occurred most frequently was that of a major second. (6)

Delton Alford in a follow-up study (reported in 1971) with the same children at the ages of from 22 to 44 months found that age level influenced the emergence and development of music responses. However, the combined aggregate scores of the twin pairs were still significantly lower than those of singleton pairs for three consecutive years. (7)

In a pilot study which I conducted two years ago with infants aged 1 to 36 months, using the same observational techniques, I found that body and facial responses to orchestral and choral music occurred more readily among the 1- to 11-month-olds than did participatory and imitative responses.

Environmental influences

At the Third International Seminar on Research in Music Education in 1972, Rupert Thackray posed a question concerning the role of the home environment in the musical development of young children. Two studies with which I am familiar have shown this relationship to be statistically significant. William Kirkpatrick in 1962 and John Shelton in 1965 have shown strong relationships between singing ability and the home musical environment. Shelton's research also indicated that the home environment contributes significantly to rhythmic movement, response to contrasting tempi and moods, and discrimination of pitches and melodic direction.

John Hill conducted a study in 1968 with 757 kindergarten through to first-grade children and fourth- through to sixth-grade children, representing culturally deprived and culturally advantaged children. A Primary Music Skills Test was given to the kindergarten through to first-grade children and

Fridman, Ruth, 'The first cry of the newborn: basis for the child's future musical development', in *Journal of Research in Music Education*, vol. 21 (Fall 1973), pp. 264-9.

Hunt, J. McVicker, *Intelligence and Experience* (New York, the Ronald Press [1961]).

Spiegler, David M., 'Factors involved in the development of prenatal rhythmic sensitivity', (Ph D dissertation, West Virginia University, 1967).

Simons, Gene M., 'Comparisons of incipient music responses among very young twins and singletons', in *Journal of Research in Music Education*, vol. 12 (Fall 1964), pp. 212-26.

Alford, Delton L., 'Emergence and development of music responses in preschool twins and singletons: a comparative study', in *Journal of Research in Music Education*, vol. 19 (Summer 1971), pp. 222-7.

Thackray, Rupert, as reported in Petzold, Robert G., 'A report of the Third International Seminar on

Research in Music Education', in *Journal of Research in Music Education*, vol. 21 (Summer 1973), pp. 99-105.

Kirkpatrick, William C., Jr, 'Relationships between the singing ability of pre-kindergarten children and their home musical environment', (Ed D dissertation, University of Southern California, 1962).

Shelton, John S., 'The influence of home musical environment upon musical response of first-grade children, (Ed D dissertation, George Peabody College for Teachers, 1965).

Hill, John D., 'The musical achievement of culturally deprived and advantaged children: a comparative study at the elementary level', in *Journal of Music Therapy*, vol. 5 (September 1968), pp. 77-84.

Smith, Robert B., 'The effect of group vocal training on the singing ability of Nursery School children', in *Journal of Research in Music Education*, vol. 11 (Fall 1963), pp. 137-41.

the Gordon Musical Aptitude Profile was administered to the fourth-through to sixth-graders. The advantaged performed consistently better than did the deprived. The gap between the two groups did not change at a significant rate, although the mean scores for the Gordon test revealed a slight but consistent increase in the gap through grades four to six. A plateau seemed to be reached at about the fifth grade level. (8)

The concept of maturation and critical period

Of singular importance in developmental theory is the concept of maturation. Maturation can be defined as the interaction of developmental factors within the individual. These factors include inherited capacities, environmental circumstances, and the learning process itself. For instruction to be effective, the child must be at a level of maturity that allows him to assimilate it. Although instruction cannot transcend maturity, maturity does tend to modify the results of instruction. Hence, instruction often may be quite uneconomical before a certain level of maturation is reached. These statements do not negate the importance of critical periods in the development of specific skill and behaviour patterns. When a child reaches a stage of maturation where he can best profit from a certain kind of learning, the withholding of this learning experience may cause the behaviour pattern in question to remain undeveloped. Maturation is stimulated when a child encounters challenges that are not too difficult. (9)

We must be cautioned against attempting to increase cognitive development beyond certain limits. Each point of balance within the progressive equilibration of thought processes has to be fully integrated into the existing thought structures. As Piaget so eloquently argues:

> The ideal of education is not to teach the maximum ... but to learn to learn, to learn to develop, and to learn to continue to develop after leaving school. (10)

Robert Smith concluded from a longitudinal study that stages occur in the vocal development of 3- and 4-year-olds. His research suggests that group vocal training is appropriate for young children and results in a significant improvement in tuneful singing ability. Smith's research also indicated that training in the lower range of middle C to the A a sixth above (c' to a') produces more general improvement in overall singing ability. (11)

A follow-up study of kindergarten through to second-grade children who had earlier participated in the Smith study showed that no significant difference in vocal accuracy existed between these children and a control group who had not experienced vocal skill-centred training at the preschool level. This study concluded that pre-training may accelerate the normal

development of vocal accuracy, but will not noticeably affect it in any other way. The gradual improvement with age for both groups of children provides evidence that cumulative musical experiences together with maturation are important factors in the development of vocal accuracy. And it must be remembered that for any given age, individual differences can and do occur.

Groves, William C., 'Rhythmic training and its relationship to the synchronization of motor-rhythmic response', in *Journal of Research in Music Education*, vol. 17 (Winter 1969), pp. 408-15.

In a study with 131 six- to eight-year-olds, William Groves in 1969 investigated rhythmic training and its relationship to the synchronization of motor-rhythmic responses. He found that age and maturation seemed to be more significant to rhythmic synchronization ability than instruction.

Absolute pitch

Sergeant, Desmond and Sheila Roche, 'Perceptual shifts in the auditory information processing of young children', in *Psychology of Music*, vol. 1 (June 1973), pp. 39-48.

In research reported in **Psychology of Music** (June 1973), Desmond Sergeant and Sheila Roche convincingly argue that absolute pitch follows a developmental pattern and occurs near the beginning of this development. The trait is seen as being attributable to powerful visual, verbal and motor reinforcers of pitch perception associated with the learning of an instrument during the critical period before preconceptual thought with its reliance on perception is transcended by conceptual thought. At this time, the centring of perception on a dominant aspect of the perceptual field is especially strong. If specific pitches become the focal point of a child's aural perception, it should be possible for the child to master their absolute identity.

The research of Sergeant and Roche with 36 children, aged 3 to 6 years, shows that attention to the absolute pitch level of a melody is greatest with the 3- to 4-year-olds and diminishes with each succeeding age group, namely the 5-year-olds and the 6-year-olds. In their study, as absolute pitch diminished, as demonstrated behaviourally by the accurate pitching of songs, conceptual understandings of melodic shape, intervals and tonality increased, thus revealing an inverse relationship between these two types of tasks. By the time children begin elementary school, it is quite possible that this critical period for the development of absolute pitch has already passed.

Nadia Boulanger often told the story of how she helped her cook's baby develop absolute pitch. From the time he was an infant only a few weeks old, Mme Boulanger would carry him to the piano and play 'A' and sing 'A' for several minutes each day. Gradually other pitches were added and the child did develop absolute pitch.

I know a researcher who insists that teachers and mothers carry a pitch pipe at all times so that any song sung with infants and pre-schoolers is always sung in the same key as when initially presented. An interesting study

could be designed with experimental and control groups to test the hypothesis implicit in this example. (12)

Spontaneity in music-making

Pre-school children can arrange sounds on the basis of one dimension, for example, fast-slow, loud-soft, high-low. They can also classify on the basis of one criterion, for example, all loud sounds, all soft sounds. In the early elementary grades, perhaps we spend too much time teaching loud-soft, high-low and fast-slow discriminations when we should be concentrating on directional movement, tonality, and so on. In my research, the point was made that too often teachers follow the line of least resistance and teach what is simply easy to teach rather than provide what the child needs to further his musical development at any given time.

Moorhead, Gladys and Donald Pond, *Music of Young Children,* vols. 1-4 (Santa Barbara, Pillsbury Foundation for Advanced Music Education, 1941-51).

As long ago as 1941, Gladys Moorhead and Donald Pond studied the spontaneous music-making of children, aged from 1-and-a-half to 8-and-a-half. They found that much spontaneous music occurred with physical activity and in symbolic play. Sounds that the child had already heard were imitated. As in the acquisition of language, imitative and symbolic play helped the child to begin to acquire a vocabulary of sounds which form the base for the later formation of musical concepts. For example, the 2-year-old enjoys playing with language by using it repetitively and rhythmically. This leads quite naturally to chanting.

Oman, Elizabeth, 'An investigation of children's rhythmic development in music', unpublished paper presented at Music Educators National Conference, Anaheim, 1974.

Elizabeth Oman found that rhythmic language development parallels oral language development by using short utterances. Before the age of 6, songs should be chosen that have short phrases and much repetition.

> ... continuous rhythmic movements not natural to the earliest years. Child's natural form of expression spasmodic with no link between gesture and idea. Does not prepare future actions and often forgets present ones. (13)

Perceptual/conceptual development in music learning

Zimmerman, Marilyn P., 'Musical characteristics of children', from Research to the Music Classroom, No. 1 (Washington, D C, Music Educators National Conference, 1971).

In a summary of research pertaining to perceptual development which appeared in **Musical Characteristics of children** in 1971, the following conclusions were identified:

(a) Loudness discrimination develops first. (14)

(b) Melodic and rhythmic discrimination develop somewhat concurrently and improve with the increasing attention span and the improvement of the memory function.

(c) Wider intervals are easier to perceive than the more narrow intervals.

(d) Perception of simultaneous sounds or harmony seems to be the last to develop, possibly because of the perceptual centration phenomenon. (15)
(e) In Robert Petzold's research, a plateau in auditory perception was reached by the age of eight.

Petzold, Robert G., 'Auditory perception of musical sounds by children in the first six grades', Co-operative Research Project, no. 1051 (The University of Wisconsin, 1966).

Conceptual development in musical learning is dependent upon aural perception, since musical learning begins with the perception of sound. From our various perceptions of music, we develop the musical concepts that permit us to make comparisons and discriminations, to organize sounds, to generalize, and, finally, to apply the emerging concepts to new musical situations.

Several research studies concerning conceptual development have been conducted in recent years. Marilyn Pflederer in 1963, Frances Andrews and Ned Deihl in 1967, Marilyn Pflederer Zimmerman and Lee Sechrest in 1968, Grace Laverty in 1969, Donald Taebel in 1971, and Ronald Larsen in 1972 name only a few in the United States that have been reported in literature. For the most part, these studies have been conducted with elementary school children.

Pflederer, Marilyn, 'The responses of children to musical tasks embodying Piaget's principle of conservation', in *Journal of Research in Music Education*, vol. 12 (Winter 1964), pp. 251-68.

A very real difficulty encountered by these researchers was the differentiation between the existence of the concept as such and the possession of a vocabulary with which to express the concept. This difficulty has been mitigated by some researchers who have used multimodal research techniques with behavioural measures. Teachers sometimes have difficulties in distinguishing between teaching a concept and teaching the meaning of a term or expression that designates that concept, or in differentiating between teaching a skill and then using that skill as a vehicle for teaching a concept.

Donald Taebel, in a study with kindergarten through to second-grade children, found that children at all three grade levels demonstrated conceptual behaviour with respect to loudness. The concepts of tempo and duration were demonstrated at a lower level, and the concept of pitch was generally lacking. There was a significant difference in performance between kindergarten and first-grade, but not between grades one and two.

Andrews, Frances M. and Ned C. Deihl, 'Development of a technique for indentifying elementary school children's musical concepts'; Co-operative Research Project 5-0233, The Pennsylvania State University, September 1967. See article of the same title in *Journal of Research in Music Education*, vol. 18 (Fall, 1970), pp. 214-22.

In regard to harmonic discrimination, Harriet Hair found that first-grade children could determine harmonic change when two different chords were played. Virginia Bridges in working with 378 kindergarten through to third-grade children found that a gradual development in harmonic discrimination occurred from kindergarten through to third grade. Another interesting finding from this study was that the children were better able to discriminate harmonically when listening to unfamiliar than to familiar music. This can be interpreted as an example of perceptual centration

Zimmerman, Marilyn P. and Lee Sechrest, 'How children conceptually organize musical sounds', Co-operative Research Project, no. 5-0256 (Northwestern University,

1968). Available from the Educational Resources Information Center, order number ED 028 200.

Laverty, Grace E., 'The development of children's concepts of pitch, duration and loudness as a function of grade level', (Ed D dissertation, The Pennsylvania State University, 1969).

Taebel, Donald K., 'The effect of various instructional modes on children's performance of music concept tasks', Co-operative Research Project 0-F-072 (Concordia Teachers College, 1971). See article of same title in *Journal of Research in Music Education,* vol. 22 (Fall 1974), pp. 170-83.

Larsen, Ronald L., 'Levels of conceptual development in melodic permutation concepts based on Piaget's theory', in *Journal of Research in Music Education,* vol. 21 (Fall 1973), pp. 256-63.

Hair, Harriet I., 'The effect of training on the harmonic discrimination of first-grade children', *Journal of Research in Music Education,* vol. 21 (Spring 1973), pp. 85-90.

wherein the familiar music distracted them from the task at hand.

A summary of findings on conceptual development substantiated the dependency relationship between perception and conceptual behaviour. Again, age proved to be an important factor in the development of musical concepts, with that of loudness developing first, followed by duration and pitch. Behavioural responses appear to be a necessary adjunct to concept formation and to the demonstration of concept attainment. As a perceptual or conceptual learning experience unfolds, the proper musical vocabulary should be taught and verbalization of the concept and/or a behavioural response by the child should be encouraged. (16)

Musical improvisation

Martin Prevel at Laval University, Quebec, Canada, has been engaged in fascinating research concerning 'emergent patterning in children's musical improvisations'. Taking his cue from the visual arts, Prevel has analysed the sound scribblings of children as young as age four. Over a two-year period, approximately 2000 compositions have been collected and analysed. In one experiment, the children were provided with tape recorders to record their efforts. Initial sound gestures, somewhat analogous to kinetic scribblings, were followed by more refined compositions which seemed to take into account variations in dynamics, timbre, and, finally, pitch. The eventual forms which evolved were analogous to the traditional musical forms A-B, A-B-A and rondo.

Affective development

Research has shown that affective development does not occur in a vacuum but is closely interwoven with cognitive development. Indeed, affect bears such an important relationship to intellectual development and to motivation that one cannot be considered in isolation from the others. An early manifestation is the example (mentioned above) (17) of the infant who prolongs an activity because it gives him pleasure. The entire affective realm, including feelings and attitudes, is of prime importance to the emergence and development of a healthy self concept. (18)

Study materials and tests

Programmed study materials for pre-school children have been developed for research use. Mary Romanek designed a self-instructional programme to help children discriminate among sounds in the following categories: pitch, duration, and loudness. The content to be learned was presented in story form by cassette tapes and picture books. The children were required to

Bridges, Virginia A., 'An exploratory study of the harmonic discrimination ability of children in kindergarten through grade three in two selected schools' (PhD dissertation, The Ohio State University, 1965).

Prevel, Martin, 'Emergent patterning in children's musical improvisations', in *Canadian Music Educator,* vol. 15, no. 1, 1973.

Romanek, Mary L., 'A self-instructional program for the development of musical concepts in preschool children', (Ed D dissertation, The Pennsylvania State University, 1971). See article of same title in *Journal of Research in Music Education,* vol. 22 (Summer 1974), pp. 129-35.

Nelson, Carl B., 'Self-instructional packages to assist preschool children to perceive specific characteristics of musical sound', unpublished paper presented at Music Educators National Conference, Anaheim, 1974.

Simons, Gene M., 'Measurements of selected music listening skills of

listen, sing, perform, and move to music. A Preschool Musical Concepts Test was designed to evaluate the success of the materials. The examples in the test were taken from the programme. Analysis of the results indicated that the children were able to learn the designated concepts as measured by the evaluating instrument. Again the children could easily discriminate degrees of loudness, whereas the concepts of pitch and duration were more difficult. (Carl Nelson at Cortland, New York is also working on self-instructional packages for pre-school children.) (19)

Gene Simons has designed Measurements of Musical Learning for use with very young children. Although the materials were field tested with kindergarten through to fourth-grade children, they could very easily be adapted for use with 3-year-olds. Findings indicated that at all four levels the highest mean score was on the identification of two rhythm patterns as being the same or different, whereas the lowest mean score was on identification of skips and steps. The total mean score increased with each successive grade level, again with the greatest difference occuring between kindergarten and grade one.

Critical periods in learning

From these short summaries of research findings, we can begin to detect developmental trends in musical growth. Early in the sequence is the critical period for learning absolute pitch levels which are demonstrated behaviourally, that is, the 3-year-old is able to sing earlier-learned songs in the same key that he first heard and learned them. We must remember that this is a perceptual learning. But, with imaginative guidance and the proper musical experiences, it should be possible for that which has been apprehended perceptually to be remembered and formed into operational concepts concerning melodic shape, tonality and intervallic movement. Another critical period seems to occur between the ages of 5 and 6. Each critical period in the child's development is also a critical period for the adult, be he parent or teacher, to provide that environmental encounter which will maximize the child's potential at any given time.

The application of these researches to music teaching

Let us now return to some of the discussion areas identified at the beginning of my remarks for our recapitulation and coda. The importance of both environmental setting and critical periods resulting from genetic endowment must be underscored. The musical environment can or cannot provide the opportunity to learn. This environment or, in a more formal sense, the curriculum must programme the child's progression of encounters and

young children', unpublished paper presented at Music Educators National Conference, Anaheim, 1974.

experiences with music so that his musical potential is realized. The child should find the musical environment inviting and responsive to his musical needs even as it has been carefully structured to modify and shape his musical behaviour.

Without rich musical resources to nurture and maximize the child's potential throughout his development, and especially at those times when he is most susceptible to learning a particular skill or concept, his potential will quite possibly remain unfulfilled. At any given time, the richness of the environment for musical growth is a function of the appropriateness of that dynamic match between the inner organization of musical thought structures and the external musical setting.

Broad exposure to musical stimuli and experiences should be considered the over-all curricular requirement. Within this broad exposure, detailed training — yes — and even some drill are essential for developing both listening and performing skills. Again, there are critical periods in musical development when drill and detail are most effective.

Greenberg, Marvin, 'The development and evaluation of a preschool music curriculum for preschool and head-start children', unpublished paper presented at the Music Educators National Conference, Anaheim, 1974.

Marvin Greenberg has found that preschool children can respond to cognitive aspects of music and develop awareness of the elements through a planned sequential musical curriculum. Programmed learning materials provide a structured sequence of learnings that can and should be used for self-directed individualized instruction. Teachers and para-professionals in the schools and parents in the home should participate in music making with the children so that the children will have models with whom they can identify.

During the formative years, children can most easily learn to sing, develop attentive listening habits, play simple instruments that do not require fine muscular co-ordinations and engage in creative movement to music. These skills involve the sensori-motor and pre-operational stages of learning. Through these skills a foundation of musical learnings can be constructed.

The sequence of learning should be viewed as a continuum from **assimilation**, to **accommodation**, to **discrimination**, to **categorization**, to **organization**, through **improvisation**, to the **application** and, finally, to the **conceptualization** — and then the **reapplication** and the process starts all over again. The 2- and 3-year-olds need a multiplicity of experiences in assimilating, accommodating, discriminating, and fewer of the higher order. The 3- and 4-year-olds need multiple experiences in categorizing, organizing, and improvising; and the 4- and 5-year-olds need many opportunities for improvising, applying and conceptualizing.

In the United States, music programmes for early childhood education do not really follow any set pattern. Textbook series begin with kindergarten so

that organized materials for pre-school children are not readily available. Teaching strategies from Carl Orff, Zoltan Kodaly, Emile Jaques-Dalcroze and the Manhattan Music Curriculum Project Interaction materials should be adapted to early childhood music education and field tested.

I believe that the time has come for interested participants at this Research Seminar to design research studies in early childhood musical development so that cross-cultural norms can eventually be established. These studies could be conducted in our individual countries and the findings pooled.

We all agree that longitudinal studies are most ideal for studying individual development. Yet, if we discover that groups of children at particular levels possess certain musical characteristics and/or require certain kinds of experiences to acquire new abilities, then we have discovered a kind of regularity or norm. From this type of cross-sectional study, we could develop learning materials that could be shared and that would indeed give our teaching an international flavour.

Notes

1. In the preparation of this paper, the author intentionally avoided research in this field by Dr Arnold Bentley and by participants in the Seminar.

2. See the abstract of Dr Zimmerman's background paper 'Conservation in Musical Experience' (p. 27) for a fuller interpretation of Piaget's concepts. Dr Zimmerman's pioneer application of Piaget's theory to music education is reported in Pflederer, Marilyn, 'The responses of children to musical tasks embodying Piaget's principle of conservation', in *Journal of Research in Music Education*, vol. 12 (Winter 1964), pp. 251-68.

3. After the reading of the paper, participants discussed several issues. On the topic of early discrimination among sounds, there is evidence to suggest that an infant's first discrimination is of timbre (Abel-Struth), later of loudness (Michel) and, lastly, of pitch (Thackray).

4. This is possibly one of the earliest instances of motivation: the affect becomes so significant in the relationship of intellect and motivation that it is difficult to separate one from the other (Zimmerman).

5. Recent research by Ruth Fridman bears upon this kind of study — see Fridman's background paper (p. 25).

6. Earlier research had indicated that the most frequent interval to be found would be a falling third.

7. In discussion, Shuter reminded the Seminar that research had confirmed that, generally, twins do not develop as quickly in speech and general mental ability as do singletons. (One possible reason for this may be the interaction between twins and consequently less interaction between the twins and other people.) Therefore, the point of Simons' and Alford's research may have been to test this assumption in musical development.

8. All literature on this kind of study has shown evidence of these plateaux occurring at about the fourth- to fifth-grade level (at about 9 to 10 years of age). Perhaps this factor should be given more consideration (Zimmerman).
In discussion after the paper, mention was made of evidence which suggested that the learning process is much slower after 10 years of age, thereby giving urgency to any attempts to introduce music teaching at an early age (Thackray, Michel). An interesting side-issue of learning rates was Hoffer's observation of a national assessment of children of 9, 13, and 17 years, and adults of 26 to 35 years, conducted in the United States, which revealed that girls do better than boys in learning: the lag in the boys continued throughout all age groups.

9. In discussion, it was stressed that a greater understanding is required of maturation and the principle of critical periods in the learning process. The appreciation of the need to teach things at the time when something is learned most easily and with best results can lead directly into the implications of curriculum development (Eicke). Notice of research into the critical period for specific activities — for example, instrumental teaching (Silsbury) — was asked of the participants. Thackray reported that rhythmic 'maturity' is achieved by 15 years of age although some elements of rhythm develop at different rates: the ability to keep steady tempo, for example, improves least of all with age.

10. Piaget, Jean, *The Child and Reality*, (New York Grossman Publishers, 1973).

11. The results of Smith's research provoked considerable discussion after the paper. Interest centred on the natural range of a child's voice which research suggests to be lower than commonly thought. Smith's c'-a' correlates with the experience of many of the participants (Silsbury a-a'; Takahagi c'-c'', for example), although many of the published song books for young children are pitched much higher. The desirability for head-tone by teachers, rather than natural voice, could be a factor (Hoffer). Zimmerman pointed out that the awareness of the development of a child's voice in lower registers before high registers has led to the republishing of many songs

in lower keys. The teacher, who so often determines the pitch level for children, should be encouraged to go to the child's natural range (which child in a class situation? Bartle) so that he feels able to sing. Michel agreed that the important thing was that the child must be encouraged to sing. Hoermann's experience had indicated that teachers had been given confidence by taking the note from the child, and that singing in the child's natural range had not destroyed the quality or enjoyment of singing.

Areas of concern among participants which were related to vocal range included:

(a) the availability of evidence to show if damage to vocal chords may be possible through incorrect singing, or singing at incorrect (too high, too low) pitch (Bartle). (Evidence suggests that any damage is most probably from psychological stress and strain — Hoffer);
(b) the need for research to determine what is the natural tension of vocal chords (Eicke) (The Japanese Ministry of Education had conducted experiments about 1958-60, and had drawn up a classification of types of children's voices, which had been useful to teachers (Takahagi));
(c) the desirability of examining singing habits of different cultures which have a real bearing on teaching methods: cultural habits of particular countries inevitably must play a part in determining each country's 'normal' or 'healthy' development (Eicke);
(d) the appreciation of the fact that each voice develops individually and that teachers have to teach a class (Eicke).

There was strong reaction to the more general — and basic? — question, 'Why teach singing in schools?' The concern expressed against singing was that the text could stand in the way of the music — that is, the sense of the words could become more important than the music. Arguments in favour of singing included:

(a) often the lack of instruments made the human voice the only instrument available (Hoermann);
(b) singing allowed for the immediate participation in music making by all children (Hoffer); and
(c) singing was an easy way of getting music into the classroom, the point to remember being that it is important that good music — any good music — must be performed in schools (Takahagi).

The consensus expressed on behalf of the participants by Eicke was that it was the obligation of everyone engaged in music education to develop the voice of each child, as the voice provided the basic means of human expression.

12. In discussion, Thackray questioned the desirability of encouraging the development of absolute pitch.

13. Emile Jaques-Dalcroze, *Eurhythmics, Art and Education*, (New York: A.J. Barnes and Co., 1930), p. 81. Oman's results support Jaques-Dalcroze's observation: a child lives only in what he is doing at the time.

14. See note 3.

15. Further research, which is needed in this area of music perception, may throw this premise into question. See Zimmerman's background paper, 'Conservation in Musical Experience' (p. 27) for an explanation of the centration phenomenon.

16. Zimmerman, Marilyn P., 'Emergence and development of music responses in infants and preschool children', unpublished paper, 1971.

17. In the section 'Musical perception in infancy' (p. 12) together with note 4.

18. The difficulty of defining the criteria of a 'healthy self concept' was discussed by participants. It would seem to have been agreed that this state is possible only at an age when a child can discriminate and make a conscious choice from the values found in the society around him — a reconciliation (Ritchie) with social development.

19. Nelson and Romanek were working along similar lines for some time without knowledge of each other's work until each reported at the same conference. This points to a need for more regular and up-to-date interchange of ideas among researchers. See note 3 for discussion of early discrimination.

Section II: Abstracts of Background Papers

Introduction

John M. Jennings

Background papers were presented to the Seminar by 18 of the 26 participants. Many of these papers bore directly upon the main theme of the Seminar - research in music education with very young children — while many others reviewed the participants' research projects (teaching methods in schools, musical perception testing, comparative music education studies). The remainder provided overview studies of music education in their respective countries.

All papers were prepared, printed, and circulated to all participants some time before the Seminar met in Christchurch. This allowed everyone an opportunity to examine each person's contribution. Therefore, the papers were not read to the Seminar: instead, over half of the sessions were devoted to discussions of the papers during which time the authors were able to answer questions, explain research procedures and demonstrate working methods, frequently by means of transparencies, tape recordings, and video-tape recordings.

The abstracts of the papers presented here attempt to summarize each paper, focusing attention on the most important results of recent research.

Sonorous-rhythmic Expressions of Babies in Relation to Future Musical Activity and Articulated Language

Ruth Fridman

Research has now begun on sounds emitted by a sample of eight babies from birth. It is hoped to test four of them through to 5 years of age: at present they are 10 months old. Data to date has shown that three premises are being fulfilled:

(a) a baby's first cry is the generator of intonated language;
(b) intonated language provides the basis for articulated language; and
(c) a baby's first cry is related to movement **per se** and to musical rhythm.

A baby's sound gradually acquires structure and becomes related to the future acquisition of articulated language and musical language. When a baby begins to repeat sound patterns, he provides a useful feedback: the early ability to organize musical materials through song indicates an ability for mental organization.

The Necessity for an Early Development of Musical Talents at Pre-school Age and the Problem of Aptitude Diagnosis

Paul Michel

Musico-psychological research is confirming the need to lay the foundation for high-level musical attainment at an early age. In experiments conducted throughout the German Democratic Republic for many years, the 5- to 6-year-old age group was the most favourable phase for the development of musical abilities under optimum conditions.

It is important that **all** children experience music at an early age so that the selection of children for intensive training may be assessed over a period of time. Each child's basic personality — his urge to be active, his readiness to make the effort, his ability to progress from 'concrete-descriptive' thinking to 'abstract-logical' thinking — is considered alongside his musical aptitude as demonstrated by the quality of his response to music-making. Artificial testing methods are not used: the assessed and assessor work together under normal educational routines.

The older children (about 6 years of age) are then trained for one year under optimum conditions (nine months general music training and three months tuition on an instrument) to allow a more confident assessment of potential development of high-talented children.

Tests of Feeling for Tonality

Rupert Thackray

Although earlier tests of feeling for tonality in young children have concentrated on an harmonic approach (Erik Franklin in 1956 , for example), the tests devised in this project have approached tonality in a purely melodic context. These tests were designed to measure a feeling for

tonality, but not to determine the ages at which children develop this feeling. The validity and desirability of testing and developing a feeling for tonality in view of recent trends in music away from tonality have been considered.

The results of tests as administered to 10- and 11-year-olds and a smaller group of 8-year-olds together with discussion among teachers suggest that a feeling for tonality develops naturally — clearly established by about 6 to 7 years of age — from exposure to tonal music. In other situations, improvisations by children (even as young as four years of age) have shown evidence of a feeling for tonality.

Conservation in Musical Experience

Marilyn P. Zimmerman

The research of Jean Piaget has provided insights into the development of children's thought patterns. His understanding of concept development is based on the principle of 'conservation', an individual's ability to retain the invariant qualities of a particular stimulus when the stimulus field has been changed. A related principle, that of 'centration', may be represented in music by a novice's fixation upon dominant elements in the music he hears for the first time. 'Decentration', therefore, implies a 'decentring' of perception to explore other aspects of music, providing more complete and undistorted information about the music.

The relationship between perception and concept formation is very real. Musical concepts are developed from various perceptions of music: the conceptual musical framework developed through the progressive organization of music experiences permits an individual to think about what he has heard. The musical learning process moves back and forth through three phases:

(a) the perception of tonal-rhythmic relationships;
(b) the mediation of these relationships into meaningful concepts; and
(c) the representation of these relationships at the symbolic level of notation.

Research by Zimmerman and Lee Sechrest was designed to discover how a child organizes conceptually the music sound he hears. Tests evolved from three ideas, namely:

(a) an examination of the decentration process and conservation in

musical development, to indicate a more efficient way of presenting musical concepts to children;

(b) the possibility of determining when, in a developmental process, a certain type of musical experience would produce the maximum amount of growth; and

(c) the possibility of producing a unique instrument for determining sensitivity to tonal and rhythmic patterns.

See Zimmerman, Marilyn Pflederer and Lee Sechrest, **How children conceptually organize musical sounds**, Co-operative Research Project 5-0256 (Northwestern University, 1968).

The Problem of Socialization in Early Childhood Music Education

Sigrid Abel-Struth

The problem of socialization has been approached from three viewpoints in musico-pedagogical research:

(a) the importance of a child's social background in the formation of his musical disposition;

(b) the influence of mass media on a child's musical development; and

(c) the effect of musical socialization in the acquisition of musical attitudes.

The third area is open to more detailed research as music learning must be now examined with regard to the social processes which are connected with its teaching. Attitudes towards all matters, not just music, are developed in early childhood and these are likely to affect attitudes in later life. Therefore, a realization of this factor emphasizes the important and decisive role played by parents, especially in the shaping of musical attitudes.

Fundamental Principles of Musical Improvisation

Violeta H. de Gainza

Improvisation in music may be defined as the spontaneous production of

personal musical materials. Successful improvisation will produce a musical continuity which uses valid musical materials with a certain degree of creativity.

The range of methodology stretches from a freedom restricted by rules to a spontaneous participation of the mental conscience. The sources for improvisation may come from the internalized store of musical experience which is manipulated and expressed, or from the environment from where musical sounds are perceived and absorbed into one's musical vocabulary. In the first stages of musical growth, vocal play tends to be more of the expressive type while instrumental play requires the absorption of external sound elements. Therefore it may be appreciated that instrumental play educates the child aurally and musically, which would appear contrary to those who maintain a child should learn an instrument only after his ear has been sensitivitized by previous musical education.

Improvisation — a combination of imitation and creativity — is stimulated by musical elements on the one hand (sound, rhythm, melody etc.) and extra-musical elements on the other (objects, feelings and senses, narration of events through sound, and impressions of form, volume, etc.). A child does not need to have studied music before he can improvise. Free play nourishes the aural consciousness of a child, allowing a greater participation by the ear and resulting in a widening of the supply of basic musical structures available to the child for use in later musical expression.

A Report of a Project to Examine the Transfer of Attitudes and Skills Gained from Specialist Music Training to Other Areas of Development in Children Aged 3.6 to 5.6 Years

Dianne Bresciani

Work has just begun on a research project involving 40 children aged between 3.6 and 5.6 years, from a privileged socio-economic background. Half are given music training, while the remainder act as a control group; each group is tested periodically for general ability (spatial orientation, memory, visual and auditory discrimination). As language is not essential to musical experience, music therefore has a special propensity for drawing-out inner experiences which introduce the child to social realities as an active participant.

The music programme being devised provides a structural setting but does

not impose a curriculum. Rather, it is geared toward active participation, allowing individual expression within a group situation consisting of children of different capabilities for receiving and processing information. It is to be hoped that identical elements of acquired skills will be transferred to other areas of learning.

The Relationship Between Musical Abilities and Personality Characteristics in Young Children

Rosamund Shuter

Much less research has been carried out on the relationships between musical abilities and personality characteristics than between musical and other intellectual abilities. Present projects in England have been aimed at relating personality factors with musical variables among a sample of children aged from 8 to 12 years.

Results of tests have tended to confirm findings of other researchers, in which the significant correlations between personality factors and musical variables come from children of contrasting personality types: the 'tenderminded' who, as a category, show a strong subjectivity and emotional sensitivity indicative of the imaginative child interested in the arts; and the 'self-controlled', self-disciplined, self-reliant personality, who may be ambitious and disposed to reduce and control expressions of emotions.

Innovations in Music Teaching: A Research Project

Helmut Segler

This project has a similar starting point to studies reported by Sigrid Abel-Struth and Edmund A. Cykler (see abstracts of their papers, p. 28 and p. 33

The acquisition of social attitudes as suggested by Abel-Struth is not as important as the matter of changing these attitudes through the learning process. Therefore, the process must come from within, leading to a reduction of outside influences on the determination of attitudes.

Video-taping, as carried out by Cykler, for use in comparative studies

could be made more useful by describing the intentions behind the innovations in teaching methods. After sufficient preparation, the pupils themselves could take part in the actual recording.

A Study of the Effectiveness of the Curwen-Kodaly Hand Signals

Charles R. Hoffer

An attempt was made recently to test the efficiency and effectiveness of the John Curwen handsignals as adopted and slightly adapted by Zoltan Kodaly. These signals form an integral aspect of the method of the Hungarian Singing School which has been adopted in a number of American elementary schools.

A small experiment was arranged involving first- and second-grade children (6 to 7 years of age) in two elementary schools in Bloomington, Indiana, in pair classes — one experimental and one control class in each grade (four classes in all). One teacher was involved — not a specially-trained 'Kodaly teacher' — and the normal music curriculum was maintained. A comparison of results of a specially-devised test administered before and after the experimental period of 23 weeks (October 1972-April 1973) was unable to show any significant effect from the use of hand signals. This cannot be interpreted to mean that the signals are ineffective but, rather, that the Curwen-Kodaly hand signals have yet to establish themselves as an effective aid for children in learning to sing pitches or understand notation.

Music Education in Early Childhood from the Metropolitan West Music Research Project [Sydney, Australia]

Deanna B. Hoermann

A music-orientated educational programme based on the Zoltan Kodaly concept of music education was introduced into 11 schools in the Western district of Sydney, New South Wales, for children on entry (4.09 years, in N.S.W.). The programme was implemented by class teachers who were not music specialists, as the N.S.W. Education System does not employ music

specialists at infant and primary department level. The teaching of music in N.S.W. schools is traditionally regarded as an extra.

The introduction of this programme has reorientated the total education programme in these classes, with the enthusiastic co-operation of the teachers themselves. Four educational psychologists have reported their assessment of the project in Gwynneth F. Herbert, **Slow learning child** (University of Queensland Press), vol. 20, no. 2.

Development of the Australian Test for Advanced Music Studies (ATAMS)

Doreen Bridges

The nature and purpose of ATAMS — tests being designed by Doreen Bridges and Bernard Rechter for use at tertiary entrance level — were reported at the Third International Seminar on Research in Music Education, 1972.

The analysis of three trial forms of the test, which were administered throughout Australia between October 1972 and March 1973 to school-leavers and newly-enrolled first-year-level music students at universities and conservatories, helped in the design of the 'provisional final form' of the test. This consists of three 45 minute sections:

(a) tonal and rhythm memory, musical perception;
(b) aural/visual discrimination, score-reading and understanding of notation; and
(c) comprehension and application of learned musical material.

The test in this form was administered in early 1975 to first-year music students at all Australian tertiary institutions with most satisfactory results. Some worthwhile research possibilities may be opened up by factor analysis and correlation studies.

Comparative Music Education —A Vital Discipline in its Infancy

Graham A.R. Bartle

The problem facing the comparative music educator is how to choose valid

points of comparison between the systems of different countries. These must range from musical factors (curriculum, teaching methods, evaluation procedures, facilities) to non-musical influences — the history and evolution of education; the prevailing philosophies of general education; sociological, economic, political and demographic factors.

As a basis for a wider investigation, a beginning has been made on a study of the 14 institutions in the State of Victoria at present training class teachers of music. This should form a base for comparisons with other Australian States and the Australian Capital Territory before comparing training methods in other countries.

Comparative Music Education

Edmund A. Cykler

Interviews, observations, visitations, tape and video recordings taken of music classes in different nations (particularly in Europe) over the past 15 years are being edited and will be augmented by further recordings. These resources should prove invaluable for studies in comparative music education.

The advantages of video-tape over formalized testing are many. The children are able to work under normal classroom conditions, without the restrictions associated with unfamiliar formal testing situations. But video-tape recording is both difficult and costly and ISME should be encouraged to support a programme of activities to be carried out by students in various countries. Syllabi and writings about music education are often far from the realization of music education programmes, whereas observation of actual classes reveals what is **actually** being done in classrooms in the name of music education.

The Need for and Appropriateness of the Use of National Methods as a Solution to National Music Education Problems

Cesar Tort

The post-war years have seen the production of psycho-pedagogic studies of the child, educational methods and techniques, and the preparation of the

music teacher. Many of these researches, based on European music and methods, have been applied little-by-little to non-European countries, awakening interests in the importance of a child's musical life in his general education.

However, the direct application of European methods and techniques is not always suitable to non-European countries. We require an analysis and evaluation of the success of adaptations in non-European countries together with an investigation of the specific problems posed by natural differences in such countries and an understanding of the fundamental characteristics of the infantile folklore peculiar to the various ethnic groups. Therefore, we must encourage the creation and development of national methods and techniques to meet the challenge of national music education problems.

Governmental Assistance to Music Education Research in Australia

Elizabeth Silsbury

Worthwhile research in music education in Australia has begun only in recent years, helped by the conversion of teachers' colleges into colleges of advanced education and by state and federal governments' new awareness of their responsibilities to education and the arts.

There are three federal agencies through which funds may be allocated to music education research:

(a) the Australian Council for the Arts (through its Music Board), established 1967 — the Board has expressed its strong commitment to music education (especially pre-primary and primary) and teacher-training schemes;
(b) the Australian Advisory Committee on Research and Development in Education, established 1970 — the first music education project funded to date was approved from music applications which total about two per cent of all applications; and
(c) the Schools Commission's 'Innovations Programme 1974-75' — three out of 200 grants so far announced have been in music.

In the last three years, music education research projects have received

grants totalling about $60,000 — a significant beginning in relation to total funds available.

Some Recent Canadian Developments in Research in the Study of Music

Frank Churchley

Since 1972, research in music has continued to make considerable progress throughout Canada. The beginnings of a Canadian Music Research Council, initiated in March 1973, has an on-going committee of four scholars.

Projects of considerable and wide interest include:

(a) studies of children's improvisations;
(b) studies in musical creativity and the effects of creative behaviours on aural and visual perception of musical stimuli;
(c) investigations into present and future music education programmes in Canada;
(d) continuing work on electropiano laboratories; and
(e) presentation and evaluation of Canadian compositions with an index to composers and researchers in all fields of activity.

Research in Music Education in Japan

Yasuharu Takahagi

The National Course of Study in music, issued in 1947 and revised by the Ministry of Education in 1961, changed the style of teaching music in Japanese schools and broadened the content from just singing to include appreciation. instrumental playing and composition. Since 1958, research in music education has attempted to evaluate new ideas and to incorporate these into the National Course of Study.

Various education boards have conducted their own projects of varying duration. normally within the ordinary class instruction. Areas of research have ranged from babies' responses to music, the developing sense for melodic intervals, through analyses of children's songs, the development and

use of music laboratory systems, to children's musical experience outside of schools. Research for the main part has been carried out within the school system. It is now necessary to encourage initial attempts at interdisciplinary co-operation, and to involve college and university staff and researchers.

A Case Study in Music Therapy

Paul Nordoff and Clive Robbins

Nordoff and Robbins were invited to address the Seminar on their work in music therapy which, by 1974, had extended over 15 years, with work in 13 countries.

As a case study, Nordoff and Robbins discussed the development of one of their early students — a blind, mentally-retarded eleven-year-old girl — in twelve sessions held during 1961-62. Tape recordings illustrated the gradual response by the child, with her own attempts at improvised self-expression. The therapist's responsibility is to take up ideas of the child who, in turn, must be allowed and encouraged to respond with other creative material. Tonalities, harmonic idiom and tempi should be dictated by the child.

Experience in music therapy has shown that self-expression through music often gives the handicapped child his first opportunity to co-ordinate physical action and extend his memory and thinking processes. A greater tempo mobility usually gives the child a greater emotional freedom, more physical mobility and consequent self-assurance. Evidence suggests that the transfer from musical experience into other aspects of the learning process is very real.

Section III: Recommendations for Future Research

John Ritchie

In his first address to the Seminar, the Chairman of the Research Commission of ISME, Dr Kurt Eicke, suggested three purposes for which such seminars are arranged:

(a) to encourage the exchange of ideas among specialists in a particular field — especially as concerns goals, methods and results;
(b) to encourage everyone engaged in a specific research project to get to know more about research in neighbouring fields; and
(c) to encourage research in comparative music education.

At the end of the Seminar, an honest attempt was made to evaluate the importance of researches completed and to identify problem areas for further study. The participants divided into four working parties each of which discussed one of the following areas of concern for music researchers:

(a) research in music education with very young children (the main theme of the Seminar);
(b) comparative studies in music education;
(c) technical media and video research; and
(d) communication among researchers in music education.

The working parties presented their findings to the final plenary session at which thirteen recommendations were formulated for consideration by the parent body, ISME.

Research in Music Education with Very Young Children

Arising from the principal paper presented by Marilyn P. Zimmerman, the Seminar considered whether a series of tasks in perception and music concept formation could be designed that will help to determine cross-cultural development levels. Can an appropriate balance of perceptual, cognitive, affective and skill learnings be determined for maximum musical growth in early childhood? How does a child's socio-cultural background

affect his orientation to musical learning?

The Research Commission would be in the best position to invite appropriate persons to work on this project and to maintain all aspects of communication, as investigations should be as free from cultural bias as possible. Objective analysis of particular aspects of the investigations carried out in more than one country should be undertaken and replicated where possible.

Recommendations

1. That a research project be established involving 3-year-old children, from a variety of cultures, to explore and investigate
   (a) perceptual discrimination of loudness, duration, tempo, pitch and timbre;
   (b) conceptual understanding; and
   (c) appropriate practical skills.

2. That a comparison be made between children's musical developments in programmes of differing structures and objectives in order to establish a satisfactory balance between structured programmes and free, experimental activity.

3. That research be conducted into the effects of the environment upon the musical development of the young child with attention being given to the following specific questions:

   (a) Can young children recognize and reproduce a semitone?
   (b) How does a melodic vocabulary develop in young children?
   (c) Are there differences in the vocal ranges of children from different countries?
   (d) How do the sense of pulse, metre and tonality develop?
   (e) How does harmonic awareness and vocal range develop?
   (f) How does the ability to create and reproduce rhythmic and melodic patterns develop?
   (g) At what age do children develop the ability to synchronize movement with sounds?
   (h) How is musical expression affected by social and physical environment?

4. That a collection of children's chants from all countries be established.

Comparative Studies

Many subsidiary themes emerged during the Seminar, chief of which was the overriding realization that there existed a comprehensive and continuing need for further studies and researches in comparative education. It was agreed that although a system works well in one country it will not necessarily be a success in another; but the more each country knows about the results of research into other systems on a comparative basis the better it is for all. Communication of comprehensive, relevant, factual and accurate information is vital to the needs of the researcher and the practitioner.

With this in mind the Seminar adopted the following initiatory approach:

(a) Why undertake comparative studies? (To help understand one's own system better and to perceive its relationship (if any) with others; to comprehend differences; to interchange ideas and thus mutually to help one another.)

(b) What constitutes the system of music education of a particular country?
(i) the educational system as a whole and its relationship to its own cultural context.
(ii) The position of the music education system in relation to the total educational system.
(iii) The economic factors prevailing in particular countries.
(iv) The aims of the education system in the cognitive, affective, and psychomotor domains.
(v) The means of teacher training.

(c) How is the above information to be gathered, disseminated and exchanged? (A questionnaire is suggested but the need for observers to reside in a country for a reasonable period is emphasized if a serious survey is to be undertaken.) Observers should have a particular brief to discriminate between what is 'actually' happening and what is 'officially' happening. Researchers and potential researchers should be acquainted with the scope and importance of such surveys with the housing of results becoming the responsibility of the ISME Research Commission, possibly in linkage with RILM.

Recommendations

1. That surveys be conducted, aimed at producing the information suggested above, in countries which are prepared to co-operate.

2. That research be continued and further initiated on a comparative basis into establishing what can be expected in the way of musical skills and attitudes and the scope of musical, artistic, and general experience in children about to enter the first step of formal education. (It is believed that the potential of the young child has been underestimated hitherto.)

3. That urgent consideration through research and development be given to the young child in under-developed countries with a view to hastening the establishment of adequate music education programmes reconciled with the existing cultural climate.

Technical Media and Video Research

The technical media of radio, television, and recording provide the child of less than 5 years of age with all, or nearly all, his aural environment in most cultures. This is followed by a school life in which growing use is made of similar resources. The Seminar considered some aspects of these influences and some problems associated with their use.

Compatability of video systems on a world-wide basis was seen to be a necessity; the introduction of a particular international model was urged and ISME's support in achieving this was requested. Video equipment should be portable, battery-and-mains operated and cassette-cartridge employable.

Recommendations

1. That ISME be requested, on behalf of educational institutions, to negotiate with manufacturers to procure favourable prices for video equipment for educational use.

2. That the following areas of possible 'video research' be drawn to the attention of appropriate authorities and individuals:

(a) the training of the professional musician on a comparative basis, e.g. pianists, violinists, singers and conductors; and

(b) general music education, e.g. lesson structuring, behaviour patterns of pupils and teachers, teacher training purposes, micro-teaching (specific areas for analysis) and improvisation — evaluative purposes are obvious.

Communication

Communication was seen to be the crucial necessity between researchers and the teachers, composers, musicologists, etc., of ISME as well as between themselves. Researchers should be able to exchange information **before** projects are initiated, **while** research is in progress and **after** completion of the work. The recommendations which arose from discussion of this topic are partly associated with, or resulting from, the concept of an international music education research exchange, a clearing house for the maintenance and classification of research information.

Recommendations

1. That the means be established, through key words showing name and address of the researcher plus an outline of the project, of collating and promulgating information for all countries, this service to be operated intially under the following terms of reference:
   (a) to be called (International) Music Education Research Exchange;
   (b) to collect lists of current research in all countries;
   (c) to publicize the service in national journals through ISME; and
   (d) to limit the service to providing sources and names of persons working in specified areas (**not** supplying materials).

2. That ISME be requested to notify all member associations of the establishment of the (International) Music Education Research Exchange.

3. That the Research Commission appoint a nominee to explore the possibility of having included music education titles in RILM.

4. That encouragement be given to universities and other institutions to establish centres for specialized study and post-graduate research in music education and that liaison between such centres be assured.

Section IV: Organization of the Research Seminar

David Sell

The 1974 Seminar on Research in Music Education was the first to be held outside of the European setting. The previous three International Seminars were held respectively at Reading, England in 1968, at Stockholm, Sweden in 1970 and at Gummersbach, Federal Republic of Germany in 1972. Arnold Bentley gives a clear and concise historical account of these in his introductory chapter to the report of **The Third International Seminar on Research in Music Education** (Barenreiter 1973).

In April 1972, after learning from Frank Callaway (President of ISME) that there was a likelihood of the 1974 International Conference of ISME being held in Australia, a number of New Zealand music educators together with representatives of such bodies as the New Zealand Department of Education, The Queen Elizabeth II Arts Council, and the UNESCO Commission in New Zealand met in the office of the Director of the New Zealand Council for Educational Research in Wellington to consider the possibility of the Fourth Research Seminar being held in New Zealand as soon as possible after the Conference. The outcome of this meeting was conveyed to the Research Commission at the Third Seminar in Gummersbach and the Commission's acceptance of the New Zealand invitation was subsequently confirmed by the ISME General Assembly at its meeting in Tunis, Tunisia.

After some preliminary work at the University of Canterbury, it was agreed that the Seminar would be held in Christchurch from 19-23 August, 1974, that is, one week after the conclusion of the Eleventh International Conference of ISME at Perth, Western Australia. In the middle of 1973, an Organizing Committee was established.

In addition to the University's willingness to make available the School of Music facilities for the Seminar and to assist with the administrative costs, support and co-operation were readily offered by the New Zealand Department of Education in accommodating participants, and by the New Zealand Council for Educational Research in undertaking documentation and publication of the Seminar proceedings. The Society for Music

Education (Canterbury) undertook a supportive function in the areas of transport, hospitality, and refreshments.

It was not just from a standpoint of national interest that we in New Zealand felt that the main seminar topic should be one that would benefit this country. We believed, and Kurt Eicke (Chairman of the Research Commission) agreed, that the principle of relating the main seminar topic to the interests and needs of the host country was a sound one for purely practical and economic reasons as a higher proportion of participants from the host and adjacent countries would be likely to attend. The influence of the Seminar is at its strongest and most direct in the host country while, by relating the Seminar topic closely to the interest of the host country, a wide spread of international research interests could be covered. Reference is again made to Arnold Bentley's discussion of ISME Research Commission policy in **The Third International Seminar on Research in Music Education**, p.10.

The place of the ISME Research Commission within the structure of the United Nations Organization is seen on the inside of the back cover. The direct line of succession is shown in the boxes. The International Research Seminars represent an important sector of the various international gatherings organized by ISME. In 1974 there were three such gatherings:

(i) 27 July — 2 August at Tokyo, Japan:
'The Education of Musicians and their Public' (convened by UNESCO and organized by ISME in co-operation with the Japanese Society for Music Education)
(ii) 5-12 August at Perth, Western Australia:
'Music Education — New Challenges in Interdisciplinary Co-operation' (Eleventh International Conference of ISME)
(iii) 19-23 August at Christchurch, New Zealand:
'Research in Music Education with Very Young Children' (Fourth International Seminar on Research in Music Education — arranged for the ISME Research Commission)

The advantage of the succession and location of these events is obvious and a number of people were able to participate in all three.

List of Participants

Abel-Struth, **Prof. Dr Sigrid**	Universitat Frankfurt, Seminar f. Musikpadag, D-6 Frankfurt/Main, Sophienstr. 2	Federal Republic of Germany
Bartle, **Graham A.R.**	University of Melbourne, Faculty of Music, Parkville, Victoria 3052	Australia
Bresciani, **Dianne**	Yamaha Music Foundation, Market Street, Melbourne	Australia
Bridges, **Dr Doreen M.**	University of Sydney, Private: 11 Grosvenor Road, Lindfield, NSW 2070	Australia
Churchley, **Prof. Frank E.**	University of Victoria, P.O. Box 1700, Victoria, BC	Canada
Cykler, **Prof. Edmund A.**	University of Oregon, Eugene, Oregon 97403	USA
Eicke, **Prof. Dr Kurt E.**	Private: D 48 Bielefeld, Melanchthonstr. 44	Federal Republic of Germany
Fridman, **Ruth**	Private: Angel Gallardo 42, Buenos Aires	Argentina

de Gainza, **Violeta Hemsy**	Andonaegui 1894, Buenos Aires	Argentina
Hoermann, **Deanna B.**	Private: 128 Windsor Road, Northmead, NSW 2152	Australia
Hoffer, **Prof. Dr Charles**	School of Music, University of Indiana, Bloomington, Indiana 47401	USA
Michel, **Prof. Dr Paul**	Dir., College of Music, Private: DDR-53 Weimar, Gutenbergstr. 15	German Democratic Republic
Ritchie, **Prof. John A.**	University of Canterbury, Christchurch	New Zealand
Segler, **Prof. Helmut**	Pad. Hochschule Braunschweig, Private: 33 Braunschweig, Rudolf Wilkerstr. 11	Federal Republic of Germany
Sell, **David**	University of Canterbury, Christchurch	New Zealand
Shuter, **Dr Rosamund**	Hatfield Polytechnic, Private: 25 Godolphin House, 76 Fellows Road, London, NW3 LG	England
Silsbury, **Elizabeth**	Sturt College of Advanced Education, Bedford Park, South Australia 5042	Australia

Takahagi, **Prof. Yasuharu**	Tokyo Gakugei University, Nukui — Kitamachi, Koganei, Tokyo	Japan
Thackray, **Prof. Dr Rupert**	University of Western Australia, Nedlands, WA 6009	Australia
Tort, **Prof. Cesar**	Palanque 210, Mexico 12, DF	Mexico
Zimmerman, **Dr Marilyn P.**	National Academy of Dance, Private: 11 Carriage Place, Champaign, Ill. 6180	USA

Visiting Speakers

Nordoff, **Dr Paul**	The Music Therapy Charity Ltd, London	England
Robbins, **Clive**	The Music Therapy Charity Ltd, London	England

Observers

Beevers, **Frank**	Curriculum Officer, Department of Education, Wellington	New Zealand

Emeleus, John	Lecturer, Teachers College, Palmerston North	New Zealand
Jansen, Guy	Senior Lecturer, Secondary Teachers College, Christchurch	New Zēaland
Poole, Gresham	Senior Inspector, Department of Education, Auckland	New Zealand

Recorders Nominated by the New Zealand Council for Educational Research

McDonald, Geraldine	Research Officer, NZCER, Wellington
Platt, Prof. Peter	University of Otago, Dunedin

Tape-recorder Operator and Assistants

Cousins, John	Lecturer in Music, University of Canterbury, Christchurch
Wilby, Gary	Honours student, University of Canterbury, Christchurch
Williams, Lloyd	Honours student, University of Canterbury, Christchurch

Organizing Committee

Chairman:	Profes[illegible] of Music,
Ritchie,	University of Canterbury,
Prof. John	Christchurch
Secretary:	Senior Lecturer in Music,
Sell,	University of Canterbury,
David	Christchurch
Jennings,	Lecturer in Music,
John	University of Canterbury,
	Christchurch
Oliver,	Lecturer in Music,
Jacinth	Kindergarten Teachers College,
	Christchurch

Personnel of the working parties:

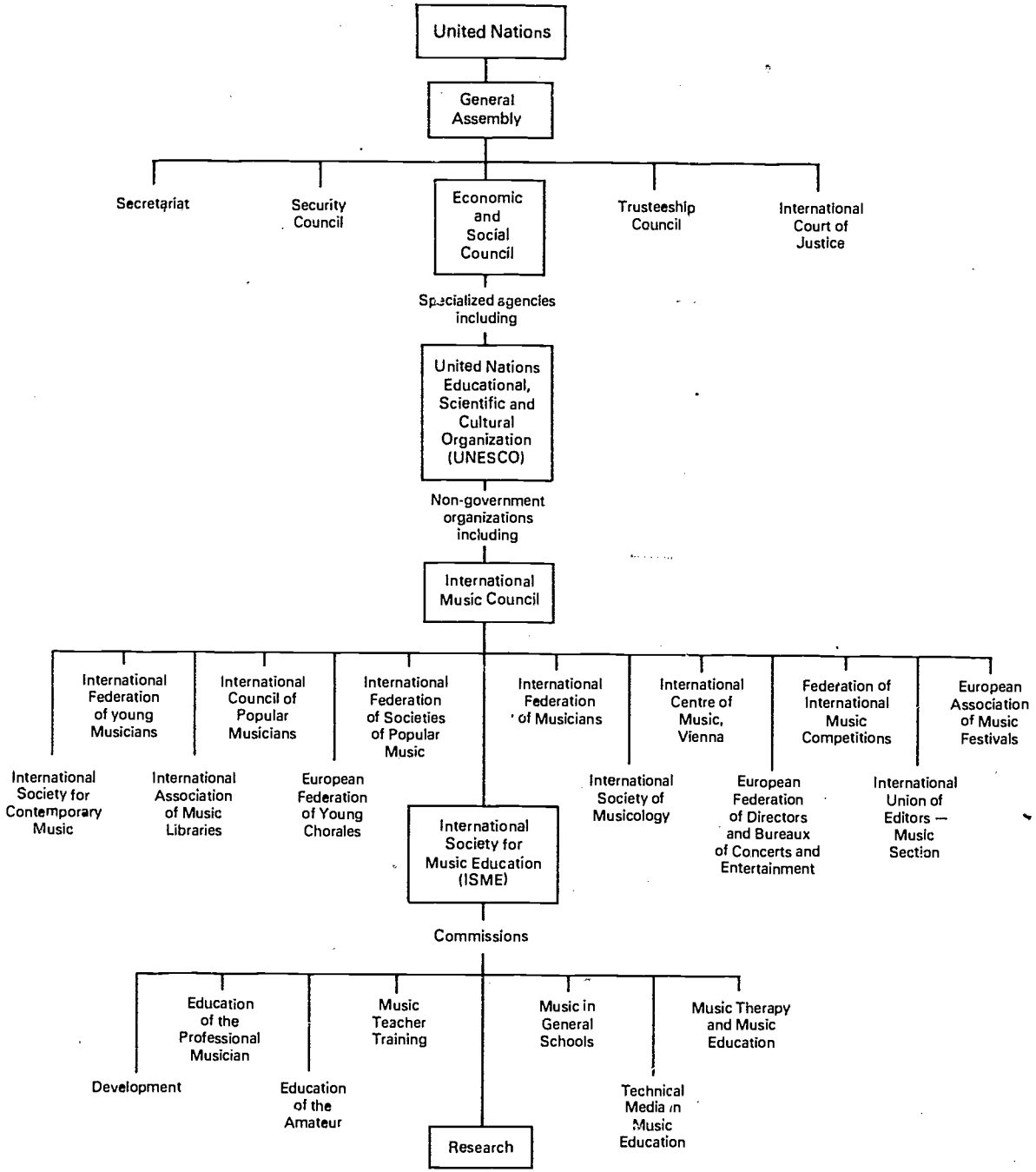
Research in music education with very young children:
Dianne Bresciani, Doreen Bridges, Frank Churchley, Ruth Fridman, Rosamund Shuter, Rupert Thackray, Marilyn Zimmerman.

Comparative studies:
Graham Bartle, Kurt Eicke, Paul Michel, Peter Platt, Gresham Poole, David Sell.

Technical media:
Edmund Cykler, Deanna Hoermann, Guy Jansen, Helmut Segler, Yasuharu Takahagi.

Communication:
Sigrid Abel-Struth, Violeta de Gainza, Charles Hoffer, Elizabeth Silsbury, Cesar Tort.

Recorder of the Plenary Session:
John Ritchie.


United Nations
General Assembly
Secretariat
Security Council
Economic and Social Council
Trusteeship Council
International Court of Justice
Specialized agencies including
United Nations Educational, Scientific and Cultural Organization (UNESCO)
Non-government organizations including
International Music Council
International Federation of young Musicians
International Council of Popular Musicians
International Federation of Societies of Popular Music
International Federation of Musicians
International Centre of Music, Vienna
Federation of International Music Competitions
European Association of Music Festivals
International Society for Contemporary Music
International Association of Music Libraries
European Federation of Young Chorales
International Society of Musicology
European Federation of Directors and Bureaux of Concerts and Entertainment
International Union of Editors — Music Section
International Society for Music Education (ISME)
Commissions
Education of the Professional Musician
Development
Music Teacher Training
Education of the Amateur
Music in General Schools
Music Therapy and Music Education
Technical Media in Music Education
Research