

FOCUS ON EXCEPTIONAL CHILDREN

Music for Exceptional Students

George L. Duerksen

Music plays a major role in the every day and special day lives of most people. It has frequent applications ranging from simple sounds for improving the environment to complex, integrated, artistic works forming the core of life's important ceremonies. Almost all cultures and subcultures incorporate music (Lomax, 1968; Merriam, 1964), for similar purposes. Music is used whenever humanity wishes to transcend, when humans want to mark the most important ceremonies of transition in life, when events are to be made memorable, when it is important to unify groups, and to achieve physical sedation or stimulation.

Because of music's multiple functions, it is particularly useful and flexible in helping handicapped students move toward normality, as well as expanding the horizons of gifted students. Achievement and application of music skills in life is a uniquely human activity. No other animal engages in musical behavior to the extent and for the variety of reasons humans do. Thus, participation in music is one of the things involved in a person's being a normal human (Gaston, 1968; Duerksen, 1981a).

Three aspects of music for exceptional students form a useful categorization, although the categories overlap and the boundaries are not clear in practice:

1. Special music education.
2. Music therapy in the education of exceptional students.
3. Music used to teach other subjects.

Each of these activities has much to offer exceptional students, but their approaches differ.

The first, "special music education," is an extension of regular music education. The full service orientation of Public Law 94-142 implies that studies available to ordinary children should also be available to the handicapped student:

Each public agency shall take steps to insure that its handicapped children have available to them the variety of educational programs and services available to non-handicapped children in the area served by the agency, including art, music, industrial arts, consumer and homemaking education, and vocational education. (*Federal Register*, 1977)

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The goals of music education might be simply described as *helping students to use music*.

The second area, "music therapy in special education," falls into the related services area specified in PL 94-142 regulations. According to these regulations, related services can include "artistic and cultural programs, art, music and dance therapy" (p. 42480). The goals of music therapy in special education might be described as *using music to help students develop so they can benefit from special education*.

The third area, "music used to teach other subjects," covers a variety of activities that special educators and regular classroom teachers have used regularly in their attempts to help students learn both academic and nonacademic subjects across the school curriculum. The goals of this approach involve *using music to help children learn more effectively or efficiently, remember better, and in general to help improve the affective component of the school situation*. This area does not appear specifically in PL 94-142 specifications.

Music, through all three of these categories, provides the opportunity to integrate school life with life outside of school. The three processes of (1) developing musical skills and knowledge, (2) using music to learn information and skills in other areas, and (3) using music to enhance affective, cognitive, and physical development all occur in the home, church, neighborhood, and marketplace, as well as in school. Music provides a

bridge for the student to transfer in-school and out-of-school activity from one locale to the other.

RATIONALE FOR MUSIC EDUCATION

The rationale underlying music education for exceptional students matches that for other students. Music education attempts to help students become as competent, skillful, and wise as possible in using music effectively and independently for their own purposes. Justifications for music education arise from several sources, including (1) the functions of music, (2) the ubiquity of music and its multiple uses in everyday life, (3) recreational and leisure-time uses of music, (4) the varieties of music reflecting minority culture groups that many special education students represent, (5) data documenting positive musical and extra-musical outcomes of music in the curriculum, (6) social pressure for music in the schools, arising from professional musicians and music organizations, and supported by the interest of parents and students. All these justifications for music reflect its adaptability. That adaptability, in turn, allows structuring a music education program to pursue a variety of goals simultaneously.

The functions of music provide the source from which other justifications for music education seem to grow. The humanizing function of music helps handicapped individuals become more normal by integrating multi-sensory processes into uniquely human modes of expression and response (Gaston, 1968). Individuals frequently and memorably reorganize and control their environments through music. Music provides a unique means of expression that cannot be duplicated by any other means. Effective music education, according to Duerksen (1977), helps individuals:

- become aware of music and musical activities and stimuli;
- evaluate and use music effectively in relation to its function and scene of action;
- become skilled in music in order to be independent in controlling the auditory environment;
- become skilled in music to express themselves and use music communicatively;
- become experienced in music sufficiently to recognize its values in their own lives.
- become aware of the world's musical heritage available for their own use;
- develop creative and recreative musical skills for expressing their own potentials;

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- recognize, understand, and use the unique aesthetic responses aroused by musical stimuli;
- use leisure time constructively by integrating needs and skills in active and passive musical participation;
- use wisdom in applying musical skills, understandings, and attitudes.

If one were to keep a log of the number of encounters with music, amount of time spent with music in the environment, and number of times one engages in some musical activity during a typical week, the significance and impact of music in daily living would become apparent. Much music is designed specifically to influence behavior. Learning to recognize these uses of music and turn them to one's advantage is important.

Recreational and leisure-time uses of music are particularly important in the education of handicapped children. Active and passive participation in music provides a broadly adaptable leisure-time activity that can be functional for disabled students. And Batcheller and Monsour (1972) have described ways in which recreational music can lead to accomplishing primary objectives of personal development for retarded children.

Jones (1976) cited data showing that a large portion of children in special education programs are from minority cultures; and Bransford, Baca, and Lane (1973) noted that "without the cultural relevancy . . . the culturally different student . . . is bewildered and frustrated." Music, as a folkway reflecting cultural mores, interests, and traditions also makes it a valuable part of education. Because music is a pervasive element in most cultures, education in the music of one's own culture and that of others can be particularly relevant.

A variety of data describe musical and non-musical outcomes of music in the school curriculum. One set details outcomes of school programs in which music and other arts provide the focus, the core, of the total curriculum. In the early 1970s the United States Office of Education funded an extensive Arts IMPACT project through its Arts and Humanities Program. The project's evaluation team reported that:

Data from several project sites which was examined by the evaluation team revealed no definite changes regarding academic achievement during IMPACT years compared to the years preceding IMPACT. It was concluded that curricula with an arts orientation do not adversely affect achievement in the traditional academic areas. To the contrary, it is believed that, if long range effects were studied, they would indicate a positive effect on achievement in academic areas. Since teaching in the arts obviously does take time away from other areas, the obvious implication is either that there is more time already

devoted to academic subjects than is really necessary, or that a better balance between cognitive and affective experience has a symbiotic effect on both.

Teachers from all projects noted that experience in the arts provided students with opportunities to meet with success in activities that were reinforcing, thus enhancing many students' self concept.

Teachers in four of the five project sites noted that students' attitudes toward school became more favorable as a result of IMPACT: students liked school in IMPACT schools. (Lathrop, Boyle, Steward, & Radoey, 1973)

Development of musical skills and attitudes has been examined in abundant studies cited in sources such as the *Journal of Research in Music Education*, the *Bulletin of the Council for Research in Music Education*, and *Psychology of Music*. The term *music* applies to many different activities, events, and objects. Although a specific disability might handicap a student for one or another musical activity, total incapacity for musical behavior seems rare.

Social pressure for music in the curriculum — accompanying the interest of parents, students, school administrators, and professional music education organizations — appears in many forms. The fact that schools include music program salaries and equipment monies in their budgets is a result of this influence. The pressures brought to bear on school districts that propose eliminating music programs because of financial stress give some indication of public interest, student interest, and social pressures (Connors, 1977). The National Commission for Instruction in Music has stated:

It is important to remember that some children suffer from physical, mental, psychological, or emotional disabilities that make it difficult or impossible for them to learn at the same rate or in the same ways as the majority of children. Not all of these children are in special education classes; a large proportion of them attend regular classes. The content of the program of music instruction for these children is not different in any essential respect from the content offered to normal children. Many handicapped children engage in the same types of learning experience as their peers, though these experiences may occur later for handicapped children, the emphases may be different, and the results may be manifest in different ways. Handicapped children can be educated in music. They deserve a program designed especially for them. Music experiences may take on special meaning for such children. (National Commission for Instruction, 1974)

As further evidence of the importance of music in education, the April, 1972, issue of the *Music Educators Journal* was devoted to music in special education. The Music Educators National Conference subsequently published a book titled *Music for the Exceptional Child* (Graham, 1975). Earlier, a chapter of the book, *Basic*

Concepts in Music Education, was devoted to music in special education (Gaston, 1958).

SPECIAL MUSIC EDUCATION

In offering music education for handicapped students, goals and objectives, along with adaptations in teaching materials, instructional processes, musical instruments, and evaluation processes are needed. Specific adaptations are necessary when the handicap stands in the way of a student's progress toward a set goal. Many times, of course, a given disability may bear little relationship to achieving a particular instructional objective.

Setting Goals and Objectives

The process of selecting goals and objectives in the education of handicapped children has been influenced by the Individualized Education Program (IEP) as specified by PL 94-142. This process has been detailed for music instruction by Graham and Beer (1980). Duerksen, Turk, Cobb, and Johnson (1981) pointed out a variety of roles music educators seem to take with IEP development committees or teams. Sometimes the music teacher functions as a regular member of the committee, sometimes as a consultant to the committee, and sometimes sets up a specific "music instruction IEP" on the basis of the content of the student's general IEP.

Music education goals and objectives fall into three categories (Duerksen, 1981a): (1) skill and attitude objectives, (2) process objectives, and (3) product objectives. The first category includes skills, knowledges, and approach behaviors targeted for the student's development. Choosing and using music for specific events, playing music, making up music, listening to music, responding appropriately to music, reading and writing music, talking and writing about music, and having at hand a repertoire of music appropriate for everyday use and special events all belong in this category. The specific disabilities in some cases make the needed adjustments obvious. The slow learner may require an adjustment of achievement level sought in a given period of time. Or specific learning disabilities may alter levels set for development of reading skills, for example. Frequently the adjustments require an alteration of the relative emphasis of the various goals that are usually pursued simultaneously.

The second category, process objectives, ranges from an objective of participation in a musical activity to an

objective of experiencing and discussing aesthetic response to music in performance and listening. This category also includes the objective of having the student experience the feelings of responsibility inherent in group and solo performance, and the feelings of interdependence and cooperation inherent in ensemble performance. Disabilities frequently require adjustments of levels and sequences in process objectives.

The third category, product objectives, includes musical performances (recitals and concerts), compositions, and recordings. It also includes writings about music and events in which music is an element. The teacher normally takes advantage of music's adaptability to set product objectives at levels appropriate to the handicapped learner's abilities.

Adaptations

After objectives have been set, variables such as teaching techniques, materials, musical instruments, and instructional settings often require adaptation. Music teaching techniques typically call for the same generic skills as instruction in other subjects. The characteristics of music, however, demand additional approaches. The primarily nonverbal nature of music is of particular importance. Musical ideas and concepts usually do not require words to communicate them. Thus, the teacher has to use many models of the musical behaviors students are intended to develop. Creating models to work with disabled learners is often necessary.

Performance provides the major process for much music instruction. The music itself often requires revision to fit instructional needs of specific learners. Teachers often rewrite individual music lines to fit the skill level of a student. Sometimes teachers help students learn their parts through techniques other than reading, such as providing aural and motor models, along with visual demonstrations. Students with visual problems often require large print or braille versions of the music being performed. The Library of Congress (Division for the Blind and Physically Handicapped, Music Section) has a large repertoire of braille and large print music, along with many instructional aids for music teachers. Students handicapped by specific reading problems require substitutes for printed music. Successful alternative notation systems include color codes for different pitches; a different blinking light for each pitch, and hand signals. Whatever the specific techniques are, the main goal is to individualize the student's part so that it is of appropriate difficulty and provides the proper variety, repetition, and interest. Individualized parts

arranged to be musically rewarding to the performer provide their own reinforcement.

Musical instruments should be chosen carefully for the individual handicapped student. Some instruments can be played primarily with large-muscle movements; others require fine-muscle skills. Some require coordination of two hands; others call for just one. Some necessitate movements that cross the body midline; others do not. The Great Expectations music program in Great Falls, Montana (Williams, 1976) has had success starting students on valved brass instruments (trumpets, valve trombones, baritone horns) and percussion.

Physical handicaps also may require adaptation of the instruments, such as (1) building supports to help the student hold the instrument, (2) building guides to help keep the instrument in the proper playing position, (3) building devices to help the student manipulate the instrument; and (4) building new versions of an instrument to fit the student's unique needs. Bailey (1973) and Clark and Chadwick (1979) have described and illustrated a wide variety of physical adaptations and devices to help handicapped students in instrumental music.

Also, handicapped students may require adaptation of the instructional environment in music class. This type of adaptation may respond to behavior problems, student's physical disabilities, attentional or perceptual problems, or social constraints. A child who is overstimulated by too many stimuli should be located at a place in the room where external stimulation will be minimal. A child confined to a wheelchair must have access to the materials needed to participate. A child who has difficulty discriminating his or her own musical output from the sounds produced by the rest of the class may need headphones and a small system for amplifying his or her own sounds in proportion to those of the peers. In public performance, shows can be arranged, props and uniforms designed, and staging devised to deemphasize students' disabilities — placing the emphasis on what they produce.

MUSIC THERAPY IN SPECIAL EDUCATION

Lathom (1981) said, "A music therapist uses music to change some aspect of communication and/or social, emotional, cognitive, or physical behavior." In the school, the music therapist helps handicapped students develop so that special education has the best chance to be effective.

Goals of Music Therapy

Among the music therapy goals Lathom listed for severely/profoundly handicapped children are: increase attention span; increase ability to follow directions; encourage active participation; improve gross and fine motor skills; encourage cooperation with peers and adults; encourage eye contact with a speaker; develop eye-hand coordination; encourage appropriate use of language; and improve auditory discrimination. This list was prepared as part of a United States Office of Education/Office of Special Education sponsored project concerning music therapy for severely/profoundly handicapped children, but the above goals would apply to mildly and moderately handicapped students, too.

Music therapy fulfills many other functions in helping disabled students profit from special education. It takes advantage of the many ways individuals respond to music, of the strong attraction some form of music has for almost everyone, and of its capacity to help people cope with problems. The field developed first in work with emotional and psychological handicaps, and it still plays a substantial role in this area. Research in the past 20 years has found musical interventions to be effective in many additional areas, including aphasia and speech dysfluencies.

In contrast to the goals of music education, the goals of music therapy do not focus on musical skills and knowledges to be developed by the student. Music therapy seeks to help the student reach non-musical goals, using music and musical activity as a way to pursue these goals. In doing this, the music therapist takes advantage of some of the characteristics of music described by Gaston (1968, 1969). An especially important characteristic of music is its use as a nonverbal means of communication. Many of the meanings of music are wordless; yet music can induce and communicate similar ways of feeling. Music offers a way to express feelings in a healthy, socially acceptable way. It also allows individuals to say things (or sing them) that they could not, or would not, say in non-musical words alone. It allows closeness without words or threat. This communicative nature of music makes it helpful in developing trust among students and between student and teacher.

Music is a highly adaptable group art. It can be adapted to group size, location, individual needs, and individual uses. The music therapist channels this adaptability to plan activities that allow handicapped

students to participate meaningfully and constructively with other students.

The gratification value of music translates into a useful tool for the music therapist. The activity of making music, or hearing music, can be something that "feels good." The positive affect of music can create a positive valence for the school situation, which in turn can help influence student attitudes toward being at school. The sense of achievement in creating a musical product can provide gratification leading to development of self-esteem (Michel & Martin, 1970). Others' recognition of an individual's musical accomplishments also helps build self-esteem.

Participation in music requires and provides a pattern for individual activity. This pattern integrates the cognitive, affective, and psychomotor domains. The pattern can be adapted to appropriate developmental levels for the handicapped child; complexities can be added step by step, with each addition designed to guarantee success. Participation in group musical activity involves the patterned individual taking part in a larger, complex pattern that requires carefully organized interaction. Thus, music activity enables carefully structured means to encourage and practice individually and socially integrated behavior (Gaston, 1968).

Evaluative Uses

Lathom (1981) described ways in which the music therapist can participate in developing a handicapped child's IEP, and in helping to carry out the individualized plan. Music therapy is of value in the multifaceted evaluation process. Many nonverbal approaches to evaluation can be designed in the music situation. Evaluations can be embedded in the ongoing music process without becoming obvious to the children, and thus avoiding changes in behavior that sometimes occur when a person is aware of being evaluated. The musical activity may provide the motivation for the behaviors being evaluated. As a result, the evaluation may show what the individual does in a motivated situation rather than in a less motivating test situation.

The music therapist arranges the evaluation situation so that two different facets of behavior can be examined: (1) What does the individual do *with* the musical activity; and (2) What does the individual do *during* the musical activity? To evaluate the first aspect, the situation can be organized to examine attention (selectivity, distractability, span), auditory perception and discrimination, physical dexterity, coordination, endurance and

strength, vocal control and inflection, short- and long-term memory, sequencing skills, and acculturation. In the second aspect, the situation can be organized to examine activity level, reality orientation, attitudes toward self, others, and music, physical behavior, interpersonal and social behavior, and general approach and avoidance responses.

A recent and promising development is the standardization and norming of music therapy evaluation processes. Gilbert (1980) developed a "motoric music skills test" that measures several areas of motor skill development in preschool and early elementary school aged children. The test includes measures of dominant hand activity, nondominant hand activity, and mixed hand activity in accuracy, range of motion, speed of motion, simultaneous bilateral movements, alternate bilateral movements, opposite bilateral movements, and parallel bilateral movements.

Intervention

After evaluation has been completed and therapeutic objectives set, the music therapist intervenes, using music for the child's personal development and as an adjunct to other parts of the school program (Duerksen, 1981b).

Cognitive Development

Using musical situations to help develop cognitive skills is important in assisting the handicapped student to take advantage of special education. Lathom (1981) described ways in which music activities are designed to help focus attention and increase attention span, and to increase eye contact between student and teacher. Reichard and Blackburn (1976) presented a variety of specific objectives, musical processes, and materials that can help develop memory and sequencing skills.

Affective Development

Another therapeutic intervention is in helping students' affective development. Sears (1968) detailed uses of music for experience within structure, experience in self-organization, and experience in relating to others. In this system he described uses of music that develop self-esteem, win the esteem of others, encourage good feelings toward others, and further feelings of group belonging and identity.

Psychomotor Development

Several approaches are suggested in using musical situations for psychomotor development. Many problems in physical coordination, dexterity, and flexibility relate to rhythm. Music activities can be constructed to provide the rhythmic structure needed to guide the student through a sequence of movements at the proper speed and in the correct order for fluency. Likewise, music can provide the structure for improved articulation and inflection in speech. In another approach, music activities can be designed to require practice of specific psychomotor skills. Practicing those skills in the musical context provides an intrinsic reinforcer that is likely to encourage continued practice. Musical activities offer a variety of eye-hand and ear-hand coordination opportunities that can be organized at appropriate levels for skill development.

Social Development

Two primary approaches are applied in music therapy for social development. The first of these uses the performance group as a setting to practice interpersonal skills, to increase socializing behavior, and to decrease antisocial behavior. In the group, individuals may be assigned different roles at different times, and these assignments can be attributed to the structure of the music rather than to the individuals involved. Group performance requires cooperation and constructive interaction for the performance to succeed. Thus, the ensemble can be structured to demand appropriate interpersonal behavior. The second approach uses participation in the music activity as a reinforcer for appropriate social behavior. In this approach, the music is used as any other reinforcer might be in a behavioral situation. The reinforcement value of a highly desired musical activity can be strong and longlasting.

Perceptual Development

Musical situations present the opportunity for perceptual development. Music requires the development of auditory concepts and auditory discrimination. It can be arranged to require practice of visual concepts and discrimination. Utilizing several senses in the musical situation affords students the opportunity to develop concepts of intersensory transfer and relationships.

Self-Image Development

Musical situations to develop self-image differ from those used to develop self-esteem. Music activities can be designed specifically to help the individual learn the relation of self and the environment. Action songs are useful in enhancing awareness and knowledge of body parts. Likewise, these songs provide the locus for learning what the body parts do, as well as skill in using them. Music therapists also structure activities to help the individual develop knowledge of the self and self-characteristics. This can be done by developing and examining self-expressions and by examining how the individual has reacted in a variety of musical situations.

Creative Development

Musical activities, suitably structured, offer the individual a protected situation in which to develop creative skills. The activity is organized so the individual first has a chance to make small rearrangements in known structures, using a minimal number of prearranged alternatives from which to choose. The number of alternatives is gradually increased, and finally the individual is called upon to create one or more alternatives without prearrangement. Musical participation organized in this way also provides a setting in which students can develop attitudes of playfulness and practice appropriate risk-taking.

Development of Self-Reliance

Most of the therapeutic uses of music described here use musical situations to develop individual independence. The activities can be structured so the student receives successively more complex opportunities to develop and practice self-reliance. The situations can be set so that increasing initiative is required for the activities to succeed.

Adjunctive Uses

A different way to look at uses of music therapy in special education is to examine the adjunctive uses of music. These adjunctive uses are, in a way, generic applications of the characteristics of music and the ways individuals respond to musical stimuli or musical activities.

Control of Individuals and Groups

Music offers a way to control and organize the individual. Specific musical structures can be used to influence physiological responses (Sears, 1959; Wilson, 1957). Music that is staccato and highly rhythmic, has wide ranges in pitch, loudness, and tone quality, changes abruptly, has accents, and is generally loud tends to stimulate physical activity of the skeletal muscles. This sort of music encourages movement. Music that is legato, with emphasis on melody and harmony, not percussive, has either vague rhythmic patterns or subdued, highly repetitive rhythmic patterns, includes gradual changes in pitch, loudness, and tone quality within a narrow range, and is generally quiet tends to be physically sedative. Music of this sort tends to generate a minimum of physical activity.

Music also is a vehicle in organizing and controlling groups. The rhythmic structure music provides can help control and coordinate physical activity. Group involvement in musical activity requires, and develops, precise coordination of physical movements among individuals. The ongoing rhythm of the music lets each individual in the group know exactly when to act. Likewise, background music can help pace the physical activity of a set of individuals in activities such as marching, dancing, other movements, and work and play activities. Singing games are an example of such uses of music.

Mood Control

Music provides a way to control mood. Individual mood effects vary with context, but some associations occur so regularly in Western culture that most individuals learn them informally before reaching school age. Many exceptional children will have learned these associations, and the music therapist can take advantage of this knowledge. Those whose handicaps have created difficulty in developing the associations through informal means need to learn them in order to behave normally. On the "happy-sad" continuum, music that is fast, high-pitched, major in mode, and staccato tends to be judged as happy. Music that is slow, low-pitched, minor in mode, and legato tends to be judged as sad (Lundin, 1967). Context plays a major role in these judgments. Not all minor music, for example, necessarily sounds sad, nor does all major music necessarily sound happy.

Creative Distraction

Music therapists often use music as a creative distraction. It is a way to divert attention from pain, to dissipate feelings of aloneness and isolation, to alleviate boredom, and to help pass time. Often used outside the school, this therapy can also be used in school situations.

Motivation and Reinforcement

Music has proved to be a strong motivator and reinforcer. The recent literature describes many laboratory and clinical studies in which music has proved to be a highly effective reinforcer for nonmusical behaviors. Many such studies can be found in the *Journal of Music Therapy*. One advantage of music as a reinforcer is that satiation seems to occur very slowly.

Communication

A particularly important adjunctive use of music is for communication. Music's basic communication is nonverbal. Words may be attached or integrated with music, but if words could communicate what music communicates, music would have little reason for being (Gaston, 1968). Processing nonverbal auditory materials involves activity in many different cortical and sub-cortical areas. These are not entirely the same areas as those involved in processing verbal auditory materials. Thus, organic or functional impairments of verbal auditory processing need not necessarily impair nonverbal auditory processing. Processing of words set to music is a complex task involving both sets of cortical areas (Duerksen, 1980).

Communication through music, or in the presence of music, is often personally and socially acceptable when verbal or other communication may not be. Music often "legitimizes" words that would not be acceptable in the absence of music. Music often permits much greater intimacy of communication than would be acceptable in its absence. It also permits, and in some cases encourages, other nonverbal communication and physical activity that would otherwise be unacceptable (Merriam, 1964).

Musical communication takes place at several levels. Some musical communications are directive. These include labels, such as school songs, national anthems, signature tunes for radio and television shows, and commercial jingles. Musical signals include instructions

for physical actions, affective responses, cognitive activities, and the induction of specific expectancies. Musical communications often serve as instructions for behavior, ranging from the instruction to "stand up" when the national anthem or school song is played, to complex social behavior patterns such as how to eat and talk while enjoying a well-served gourmet dinner (Gaston, 1969). Music's potential for directive communication allows an alternative, nonverbal route for giving instructions. This alternative often proves easier to accept and obey than direct verbal orders.

A different sort of musical communication focuses on self-expression. The act of making music, or setting words to music, gives the individual an opportunity to objectify and express feelings, attitudes, and beliefs. These objectified self-expressions can then be examined, discussed, and evaluated. Likewise, a listener projects feelings onto music as it is heard. These projections can also be a source for gaining self-knowledge and releasing tensions. Thus, music provides one of the few socially acceptable routes for the release of tension and self-expression in school.

Interactive musical communication has several facets in which students may interact with each other or with the teacher. Two persons can participate in the same musical activity, working in unison toward the same goal. This work requires cooperation and can instill feelings of partnership, trust, and working together. Or two persons can interact musically with one making a sound pattern and the other attending carefully and imitating exactly. This activity, carried out at varying levels of complexity, requires careful attention, short-term memory, and sequencing of patterns. Feelings of independence and creativity can be developed in musical interactions in which one person makes a sound pattern and the other responds with a different pattern that is structurally coherent with the first. This approach is often called "question-and-answer." When two or more persons perform separate parts of a simultaneous musical performance, with each contributing a share toward the total product, the musical communication and interaction can become very complex. Each participant must attend carefully to what the others are doing, and must fit his or her individual part into the total pattern as appropriate. This activity helps develop attention to a broad variety of nonverbal communications among participants.

Communication through musical participation not only establishes individual and group mood, as described earlier, but tends to stimulate group cohesion as well. The Kiwanis Club and the church congregation sing

together to help establish unity of purpose and *esprit*. Musical labels also help contribute to group identity. Many groups identify themselves with certain songs or musical styles. Integrated classrooms of handicapped and other children may develop group cohesion through group music. They may label themselves as unique by developing musical labels for themselves.

Aesthetics

A final adjunctive use of music is to provide an aesthetic and pleasantly affective component in the environment. Schools are often designed to be visually inviting. Music can be a key to making them auditorially inviting as well. In addition to providing a positive affective overlay to the school situation, music can be planned to help mask auditory distractions that might impede the learning process.

USING MUSIC TO TEACH OTHER SUBJECTS

Music plays instructional roles both in and out of school. In the worlds of commerce, church, and recreation, instructional uses of music abound. Witness the many "singing commercials" that tell consumers what to buy, the church hymns that tell believers how to behave, and the instructional songs of childhood such as, "This is the way we brush our teeth."

A number of general reasons support the use of music for teaching other subjects in schools. Music adds variety in instructional approaches; stimulus variation is an important technique in getting and maintaining attention and interest. Music provides multisensory stimuli to promote learning; it supplements visual learning with auditory reinforcement. Music helps make content memorable; cultures often set their most important ceremonies and knowledge to music to help them be remembered. Music can add positive affect to the learning situation, and this can encourage student approach behavior and motivate effort toward learning. Music provides a strong positive reinforcer. Some sort of music is reinforcing to almost everyone.

Five approaches for using music to teach other subjects include: (1) music as a setting for the information to be learned, (2) music as background for instruction and learning, (3) music as the context or basis for the content to be learned, (4) music as the physical structure for the learning activity, and (5) music as reinforcement for learning.

Musical Settings

In musical settings of information to be learned, the actual content is set as a song text. This approach is helpful in learning vocabulary and basic facts to be committed to memory. Several studies have shown that handicapped children remember information better when they have learned it in song as contrasted with story or other nonmusical presentation (Isern, 1961; Lathom, 1963).

A simple illustration is learning the alphabet — a series of nearly “nonsense” syllables that are expected to be known in sequence. A common way to memorize this 26-element series is to sing it. Counting songs and singing versions of the multiplication tables demonstrate this technique in basic arithmetic. Variations of this approach include song texts that recite relationships to be learned, and others that recite specific activities to be learned. The approach can be used actively, in which the learners actually perform the songs, or passively, in which the learners listen to the teacher or someone else present the songs. In either case, the music is inherent in the instructional process as an integral part of the learning activity.

Musical Backgrounds

When music is used as background for instruction and learning, it is generally designed to be unobtrusive. Background music during class can be planned to help set the mood of the classroom. Music tends to mask out other auditory distractors. Background music can also be planned to influence the tempo of classroom activity, to stimulate imaginative activity, and to influence physical activity level. In planning background music, the teacher can make careful use of the information presented earlier about physically stimulative or physically sedative music and the musical characteristics that tend to influence mood.

Musical Contexts

Many commercial products incorporate music as a context or basis for the content to be learned. An annotated bibliography of recordings and programs (Duerksen, Johnson, Cobb, & Turk, 1981) identifies many materials specifically designed for preschool and primary grades. Materials for upper elementary and secondary school levels are fewer, so teachers at these

levels might have to look harder or prepare their own materials. History and social studies teachers can find much music concerned with war, economics, social movements, pioneering, and exploration. Language teachers can find much music related to literature. Science teachers can approach science through acoustics; technology, and sound equipment, or through the biological processes of hearing and perceiving sound. The music industry itself — including manufacturing, distributing, and marketing music and related goods — and the entire gamut of writing about music offer other opportunities for instruction using music.

Physical Structures

In a different approach to using music in teaching other subjects, music is applied as the physical structure for the learning activity. Through this technique, the music's rhythm is organized to guide the actions to be done. Music can be used to structure an individual's physical coordination. The music, played or sung during the activity, sets the tempo and rhythm by which tasks are performed. This technique can be adapted to a variety of coordination tasks ranging from basic locomotor skills such as walking, running, and jumping to sophisticated activities such as sports and dancing. It also provides useful structure for developing fine-motor skills. In the same way, music can be used to structure synchronized activity among several individuals.

Music's capacity to provide physical structure also extends to helping students develop speech skills. Musical settings of speech lines and participation in “singing conversations” utilize music to structure the tempo, rhythm, and vocal inflection of verbal tasks. As students develop appropriate speech patterns, the singing can be faded out to leave normal speed, rhythm, and inflection.

Reinforcement

The *Journal of Music Therapy* presents a variety of approaches to using music as a reinforcer for learning. Dorow (1976) used televised music lessons as a reinforcer in teaching math. More frequently, however, the student's reinforcement is in the form of either listening to preferred music or participating in a preferred music activity. Another approach establishes a delayed reinforcement economy in which some accumulation of credits leads to a major musical reinforcer, such as the purchase of a musical record, attendance at a concert, or the like.

Many of these applications of music to teach other subjects are within the competence of the classroom teacher. In other cases, the classroom teacher or special educator may consult with a music therapist or music educator. Working as a team, educators and music therapists can bring the multiple influences of music to bear in the educational process, to help the student pursue and attain the best possible life.

REFERENCES

- Bailey, P. *They can make music*. London: Oxford University Press, 1973.
- Batcheller, J., & Monsour, S. *Music in recreation and leisure*. Dubuque, IA: William C. Brown, 1972.
- Bransford, L. A., Baca, L., & Lane, K. *Cultural diversity and the exceptional child*. Reston, VA: Council for Exceptional Children, 1973.
- Clark, C., & Chadwick, D. *Clinically adapted instruments for the multiply handicapped — a sourcebook*. Westford, MA: Modulations Co., 1979.
- Connors, P. M. The Louisville story. *Music Educators Journal*, 1977, 63, 38-43.
- Dorow, L. G. Televised music lessons as educational reinforcement for correct mathematical responses with the educable mentally retarded. *Journal of Music Therapy*, 1976, 13(2), 77-86.
- Duerksen, G. L. *Developing mediated teacher training packages and curriculum guidelines applicable to music education for mildly handicapped children in the full service context*. Lawrence, KS: University of Kansas, Department of Music Education, 1977.
- Duerksen, G. L. Music therapy. In R. Hernik (Ed.), *Psychotherapy handbook*. New York: New American Library, 1980, pp. 400-404.
- Duerksen, G. L. Common grounds of music education and music therapy. *Proceedings*. Adelaide, SA: Australian Music Therapy Association, 1981. (a)
- Duerksen, G. L. Philosophy and theory of music therapy. *Proceedings*. Adelaide, SA: Australian Music Therapy Association, 1981. (b)
- Duerksen, G. L., Johnson, T., Cobb, V., & Turk, G. *Using music to teach other subjects*. Lawrence, KS: University of Kansas, Department of Music Education, 1981.
- Duerksen, G. L., Turk, G., Cobb, V., & Johnson, T. *Adapting music education for handicapped students*. Lawrence, KS: University of Kansas, Department of Music Education, 1981.
- Federal Register*, 1977, 42(163), 42489.
- Gaston, E. T. Functional music. In N. Henry (Ed.), *Basic concepts in music education*. Chicago: National Society for the Study of Education, 1958.
- Gaston, E. T. Man and music. In E. T. Gaston (Ed.), *Music in therapy*. New York: Macmillan Co., 1968.
- Gaston, E. T. *Nature and principles of music therapy*. Lawrence, KS: University of Kansas, Department of Music Education, 1969.
- Gilbert, J. P. *Motoric music skills test*. Fort Collins, CO: Colorado State University, Department of Music, 1980.
- Graham, R. M. *Music for the exceptional child*. Reston, VA: Music Educators National Conference, 1975.
- Graham, R. M., & Beer, A. S. *Teaching music to the exceptional child*. Englewood Cliffs, NJ: Prentice Hall, 1980.
- Isern, B. Summary, conclusions, and implications: The influence of music upon the memory of mentally retarded children. In E. H. Schneider (Ed.), *Music therapy 1960*. Lawrence, KS: Allen Press, 1961, pp. 149-153.
- Jones, R. L. *Mainstreaming and the minority child*. Reston, VA: Council for Exceptional Children, 1976.
- Large-print scores and books catalog*. Washington, DC: Division for the Blind and Physically Handicapped, Music Section, Library of Congress, 1980.
- Lathom, W. The effect of certain action songs on body concept. In E. H. Schneider (Ed.), *Music therapy 1962*. Lawrence, KS: Allen Press, 1963, pp. 115-121.
- Lathom, W. *Role of music therapy in the education of handicapped children and youth*. Lawrence, KS: National Association for Music Therapy, 1981, p. v.
- Lathrop, R. L., Boyle, J. D., Steward, W. R., & Radocy, R. E. *Arts impact summary report*. Washington, DC: Arts and Humanities Program, United States Office of Education, 1973.
- Lomax, A. *Folk song style and culture*. Washington, DC: American Association for the Advancement of Science, 1968.
- Lundin, R. W. *An objective psychology of music* (2nd ed.). New York: Ronald Press, 1967.
- Merriam, A. P. *The anthropology of music*. Evanston, IL: Northwestern University Press, 1964.
- Michel, D. E., & Martin, D. Music and self-esteem research with disadvantaged problem boys in an elementary school. *Journal of Music Therapy*, 1970, 7(3), 124-127.
- Music library for the blind and physically handicapped*. Washington, DC: Division for the Blind and Physically Handicapped, Music Section, Library of Congress, 1980.
- National Commission for Instruction in Music. *Report*. Reston, VA: Music Educators National Conference, 1974.
- Reichard, C. L., & Blackburn, D. G. *Music based instruction for the exceptional child*. Denver, CO: Love Publishing Co., 1976.
- Sears, W. W. *A study of some effects of music upon muscle tension as evidenced by electromyographic recordings*. Unpublished doctoral dissertation, University of Kansas, 1959.
- Williams, L. *Report of the music in special-education program in the public schools*. Great Falls, MT: Public Schools, Music Department, 1976.
- Wilson, V. M. *Variations in gastric motility due to musical stimuli*. Unpublished master's thesis, University of Kansas, 1957.

ADDITIONAL REFERENCES

- Alley, J. M. Music in the IEP: Therapy/education. *Journal of Music Therapy*, 1979, 16(3), 111-127.
- Alvin, J. *Music for the handicapped child* (2nd ed.). London: Oxford University Press, 1976.
- Cassidy, M. D. Social development of TMRs involved in performing and nonperforming groups. *Journal of Music Therapy*, 1978, 15(2), 100-105.
- Cohen, G., Averbach, J., & Katz, E. Music therapy assessment of the developmentally disabled client. *Journal of Music Therapy*, 1978, 15(2), 88-99.
- Dobbs, J. P. B. *The slow learner and music*. London: Oxford University Press, 1966.
- Hanser, S. B. Group-contingent music listening with emotionally disturbed boys. *Journal of Music Therapy*, 1974, 11(4), 220-225.
- Holloway, M. S. A comparison of passive and active music reinforcement to increase academic and motor skills in severely retarded children and adolescents. *Journal of Music Therapy*, 1980, 17(2), 58-69.
- Jellison, J. A. The music therapist in the educational setting: Developing and implementing curriculum for the handicapped. *Journal of Music Therapy*, 1979, 16(3), 128-137.
- Nocera, S. D. *Reaching the special learner through music*. Morristown, NJ: Silver Burdette Co., 1978.
- Purvis, J., & Samit, S. *Music in developmental therapy*. Baltimore: University Park Press, 1976.
- Roskam, K. Music therapy as an aid for increasing auditory awareness and improving reading skill. *Journal of Music Therapy*, 1979, 16(1), 31-42.
- Sears, W. W. Processes of music therapy. In E. T. Gaston (Ed.), *Music in therapy*. New York: Macmillan Co., 1968, pp. 31-44.
- Steele, A. L., Vaughan, M., & Dolan, C. The school support program: Music therapy for adjustment problems in elementary schools. *Journal of Music Therapy*, 1976, 13(2), 87-100.

CLASSROOM FORUM

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Several of my students seem to have an unusual amount of difficulty with handwriting. Can you give me some hints on what I can do to help them?

First of all, remember that handwriting involves a number of interrelated skills that must be mastered before the final product can be considered a success. Foremost among these skills is fine-motor coordination. Readiness experiences for this skill often include cutting and coloring activities that utilize the same muscles necessary for grasping a pencil correctly and using those muscles to coordinate the writing strokes. Eye-hand coordination is thus brought into play early in the development of these skills.

Posture is also important to handwriting. If a child's chair and desk are not the right size, his or her handwriting can be affected. When a child must slump in the seat to reach the writing paper, he or she may tire easily from this awkward position. The child may also tire if the desk is too large and he or she has to constantly stretch to reach the paper.

Children who bend too close to their papers may do this because of visual problems. Young children tend to be nearsighted, and if they continue to insist on being close (7" or less) to their work, the nearsightedness may be a factor in their seatwork activities. Other indications of visual problems include unusual slants of the head toward the paper, continual rubbing of the eyes, frequent blinking or squinting, and redness around the rims of the eyes. Any of these behaviors may also affect the child's handwriting. The usual eye screening done in the schools — the Snellen or "E" chart — tests only for distant vision. Therefore, if near vision appears to be a problem, the child should be examined by an optometrist.

If none of the above appears to be the problem, the teacher could work on other aspects of handwriting in the classroom. Some children have difficulty stabilizing their papers on the desk because they "forget" to hold the paper with their nondominant hand. The teacher can help remind the child by placing cutout hand prints on the paper. Taping the paper down with masking tape

will help hold the paper in place, but this should be faded out in conjunction with reminders of hand placement to hold the paper down. Using a clipboard may also help, but again it serves as a crutch that should be phased out.

Some children use their writing to hold the paper in place. The pressure exerted in doing this quickly tires the writing hand and causes the writing to be tense and labored. Using a slanted surface helps to eliminate this undue pressure. A small incline or padding under the writing hand has similar benefits.

For older youngsters, the writing activity itself may be adapted to meet the student's needs. A student might use a tape recorder to dictate answers in lieu of writing them down on paper. Assignments and tests can be done in this way without detracting from their major purposes.

Materials can be designed so that lengthy answers are not required, although their construction should be carefully reviewed to make sure that the emphasis is not only on rote memory or knowledge-level answers. Multiple-choice items, when properly constructed, lend themselves nicely toward the higher levels of the cognitive domain.

With students who are known to have difficulty in fine-motor control, extra space should be allowed for completing written answers. Lined paper (or guide lines) is also recommended for use with these students.

Magic slates have been used with both older and younger students who have handwriting difficulties. The attraction of these is that mistakes can be easily erased, and with a little practice and coordination, students can learn how to erase only the parts they want to erase. Or the slate could be used for short-answer assignments only.

Many learning disabled youngsters have been encouraged to learn to type because of their poor fine-motor skills in handwriting. Typing provides a speedy method for completing essay questions and doing homework. If typing is to be an alternative for handwriting, however, the student should be encouraged to learn the correct method from day one. Incorrect typing may hinder the learning process. Also, if the student has unusual or severe motor coordination difficulties, typing may not be the best alternative. Undue frustration resulting from the inability to type may increase students' tension and decrease their ability to complete the task at hand. If the typing interferes with the learning process, perhaps another alternative should be considered.

In the final analysis, the teacher should carefully observe students to try to determine the exact problem and its possible causes. Only then can the total situation be evaluated in terms of possible remedial procedures.