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The use of music in facilitating learning in the elementary content classroom

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The use of music in facilitating learning in the elementary content classroom

Abstract

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**The Use of Music in Facilitating
Learning in the Elementary Content Classroom**

A Graduate Project

Submitted to the

Department of Curriculum and Instruction

In Partial Fulfillment

of the Requirements for the Degree

**Master of Arts in Education
(or Master of Arts)**

UNIVERSITY OF NORTHERN IOWA

by

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Abstract

The use of music in facilitating learning in the elementary content classroom was investigated. Music has been noted to be a part of such subjects as reading, language, science, mathematics, physical education, and art. Integrating music with these subjects was discussed. Current pilot programs include the following: Learning to Read Through the Arts (LTRTA), rap, Suggestopedia, Soviet Sleep Learning, Tomatis Method, Accelerated Learning (SALT), and background music while studying. Practical music activities for the elementary content classroom were mentioned. Much of the literature reviewed included theoretical articles, research studies and articles of application. It was concluded that more statistical research is needed to strengthen the inference that music aids learning.

The Use of Music in Facilitating Learning in the Elementary Content Classroom

Music is everywhere. It surrounds us as we eat in restaurants, ride in the car, shop for groceries, watch a movie, and live our daily life. Often it subconsciously influences our intellect and emotions. Why do we avoid using music in our elementary content classes when it is a part of everyone's daily life? We, as educators, should work with something that has become a natural part of our existence.

A growing number of investigators argue that rhythmic synchrony--the sharing of rhythms--is part of life from infancy to old age (Douglis, 1987). Sensitivity to rhythm does not arrive fully developed when a child starts talking, but may begin to develop before birth when the fetus senses the heartbeat and hears the rhythm of the mother's speech (Douglis, 1987). Mother/child pairs seem to even move simultaneously as in timing their turns precisely.

Musical sound is produced through vibrations that can be heard even while in the womb. Zimmerman (1984) stated that "as hearing is the last sense to leave the human being when he departs this world, so is it the first to acquaint the entering infant with the perceptual wonders that he [or she] is about to discover" (p. 9).

The infant becomes familiar with the surrounding world by organizing patterns and trying to communicate through babbling. There are many experiences that come to an infant through the use of all senses. The patterns aid in an understanding of the information while babbling becomes the basis for speech and communicating that knowledge. "Babbling contains a sing-song element that later becomes the basis for chant. Even deaf babies babble. In deaf children, babbling dwindles away from lack of feedback" (Zimmerman, 1984, p. 9).

Music can provide the "peek-a-boo" effect comparable to that of the sudden disappearance and reappearance of a familiar sight. Children delight at this visual experience and can enjoy it in an auditory manner as well. In the effect of a familiar tune Wohlwill (1981) suggests omitting certain portions, i.e., "letting a phrase of music run its course without being actually heard, or sung" (p. 9). The child imagines the familiar words while listening or performing actions to the tune. Unexpected wrong notes, unusually high notes, or unusually low notes can also prove appealing to very young children.

Children enjoy expressing themselves through musical play. One need only visit a playground to find students using rhyming chants for jump rope or singing familiar melodies. Since music

plays such an important role in a child's life, it seems that it would be productive to see how music affects learning in the classroom.

Even Piaget recognized the importance of music in our life. Wohlwill (1981) has translated from Piaget's views concerning music as follows:

The operations of psychological time are generally limited to the purely qualitative. But does there not exist an inner temporal metric? The most beautiful images which appear so plentifully in the work of Bergson are borrowed from music, and whenever this master of introspection wishes to express the intuitive and the antirational, the irreducible of creative time, he grasps for words of melody, rhythm, and symphony. But music is after all inner mathematics, and long before Pythagoras had discovered simple relations in harmonic chords the ancient shepherd constructed scales in his songs or pipe-playing and knew, without being able to name them, that a half-note is made up of two quarter notes, and a quarter note of two eighth-notes. Music rhythm is in fact of all temporal metrics the most directly graspable and is assuredly not foisted on us by our environment. (p. 1)

Educators are always looking for answers to teaching students. Much of the solution to teaching students who are at risk

may lie in how to motivate children to learn. The government believes that pushing the basic skills in schools will overcome the mediocrity that erodes our educational foundations, but they fail to include music as basic. They do not recognize that "art and music are the center of human existence, the way of knowing ourselves and perceiving the world, from which all else springs" (Hollander, 1991, p. 124-125).

We have seen how ancient societies placed music at the center of their priorities along with art and religious experiences. Much of the art has passed this information to anthropologists and historians. Music study fulfilled the intellectual needs in ancient cultures. Today, educators believe that music is not necessary for intellectual needs. That is why they are lead to "blindly search elsewhere" (Hollander, 1991, p. 128) for curricular development. How could we use music to supplement intellectual needs in the content classroom learning?

Problems that will be addressed in this literature review examine the use of music in the elementary content classrooms. Questions to be answered include the following: How can each content area be affected by music? Does listening to music aid in learning? What kind of current programs are being tested? What are some musical activities that can be used in a content classroom to

facilitate learning?

The types of literature reviewed include theoretical articles, research studies and articles of application. Theoretical articles and research studies will first be presented to serve as answers to some of my questions. The author reviewed current pilot programs to observe what works for teachers and included practical music activities for the elementary classroom.

For the purposes of this review, music is broadly defined as:

(a) having students listen to vocal and instrumental music, (b) having music performed either vocally or instrumentally, (c) using musical text, or instrumental music, (b) having music performed either vocally or instrumentally, (c) using musical text, or (d) using the elements of music such as rhythm, melody, harmony, texture, and tone color.

Review of Literature

Music as it Relates Across the Curriculum

Students often view content classes as separate when educators teach one discipline without crossing over into other disciplines. Although "all curricular areas include skills and concepts that interrelate with the arts. Arts integration is the process through which these common concepts are interwoven in the curriculum" (Marshall & Garner, 1983, p. 118).

Educators are needing to work on interdisciplinary approaches to learning. Reeves (1978) believes that "music specialists, therefore, must learn ways in which music can be used to reinforce and enhance learning in other subjects" (p. 75). Teachers need also to remember that artistic talents should not be thought of as the musically talented domain, but as part of the whole of every educated person (Marshall & Garner, 1983).

Kennedy (1985) believed that "students see teachers as one-dimensional. They (students) are surprised when a teacher crosses over into another discipline" (p. 358). Kennedy is a music teacher that visited a social studies classroom in his school. While he was there, he helped to answer the students' questions. The children were surprised to see that Kennedy also knew social studies information. Later the social studies teacher visited music and sang with the choir. For students to see interdisciplinary units at work, they need to see teachers interested in crossing over to bridge the gap between subjects.

Marshall and Garner (1983) investigated the impact of an arts integrated curriculum in grades K-6 called "The determination of program impact." It seemed to be an effective program. Marshall and Garner stated "the data from this study indicate that during the treatment period the students of teachers using arts integrated

curriculum learned more than the students of teachers using the regular non-integrated curriculum" (p. 130).

Studies have discussed how the left brain and right brain should interact with each other for optimum learning. Wright (1977) concurred that "music, art, and dance are emphasized in the right [brain] and language and cognition in the left [brain]. It is believed that both hemispheres must interact and complement each other" (p.1). Zeiss (1983) states that it is possible to cause an "increase in learning by creating a neurological harmony between the left and right cerebral hemispheres of the brain" (p. 3). Merrion (1981) discussed the left and right brain relationship as follows:

Ample research suggests that the left brain processes of sequential and linear thinking are concomitant in the acquisition of verbal reading and music reading skills. Correlations exist between music reading achievement and verbal reading achievement. Right brain processes such as recognizing spatial and perceptual relationships, are also involved in both verbal and music reading tasks. Auditory processing skills of a sequential nature, i.e. the essence of perceptive music listening, are viewed as critically important in the development of reading competence. Therefore it comes

as little surprise that musical experiences are functional in nurturing such abilities as listening skills, sequential thinking, recognizing spatial and perceptual relationships plus linear thinking

which are all germane to the reading task. (p. 3-4)

Music, Reading and Language

Music can exist in all subjects throughout the elementary curriculum. There were more articles that currently study music as it relates to reading than any other subject. Although research in the '70s did "not support the use of music instruction for purposes of improving language reading attainment" (Sullivan, 1979, p. 8). There did appear to be a "positive correlation between factors of musical ability and language reading ability" (Sullivan, 1979, p. 8). Most early researchers assumed a linkage between music reading and language reading. Hicks (1987) stated that "research pertaining to the effectiveness of using music in various subject areas proliferated during the 1970s" (p. 4). Zinar (1976) found reason to believe in her literature review that prior research proved the benefits of music in schools by finding a relationship between good language readers and good music readers. She also found that instruction in reading music improved the children's ability to read language (Zinar, 1976).

Music is a language. "Both music and reading deal with symbol systems, sound, and communication" (Kelley, 1983, p. 84). Music can expand vocabulary when a teacher discusses the meaning of the text (McDonald, 1975). Often difficult words can be made easier to pronounce through music. McDonald includes that "when words become interesting rhythmic patterns to be tapped out on a wood-block or sounded on a drum or tone bars, the task of differentiating syllables and accent becomes a game" (p. 873). Flashcards with movement words enable children to learn sight words with their songs. You could use words such as march or dance on the cards; then while the students sing, they follow the instructions on the cards (McDonald, 1975).

Yaakob (1973) and McDonald (1975) agree that many reading readiness skills including auditory discrimination are a part of music. "Reading readiness skills such as auditory discrimination, visual discrimination, direction, imitation, interpretation, voice expressions, listening, word meanings out of context and in context are emphasized in the teaching of musical skills for simple melodies and nonsense melodies" (Yaakob, 1973, p. 577). "Development of auditory discrimination skills, including differentiation and integration of letter sounds, syllabication and pronunciation of words, and expansion of vocabulary seem particularly compatible

with classroom music experiences" (McDonald, 1975, p. 872).

Brandt believes that auditory memory and sequencing skills in music enhance those skills in her kindergarten class. In her study she found that "the increased frequency of general music instruction by the music teacher specialist significantly improved the auditory sequencing skills of the target group of kindergarten children" (Brandt, 1986, p. 40).

Attentive listening habits and lengthening attention span are basic to reading readiness. Music increases the willingness to listen. Those with brief attention spans and poor retention may benefit from music's appeal by holding the child's attention to the task at hand and thus motivating them to learn. Ebisutani (1991) agrees that "students need to be motivated to enjoy learning as well as using a variety of media for communication and relating school learning to wider learning" (p. 4).

"Music, as an integral part of the elementary school curriculum makes an important contribution to the learning process because children find an opportunity to consolidate physical, emotional and intellectual responses to structured stimuli in a non-threatening educational setting" (Brandt, 1986, p.1). All children can participate, contribute and succeed in music activities.

Movement in music is one way to allow students freedom to be

creative while learning aspects of reading. Cohen believes that reading skills are strengthened by having students move to music. This creates a sense of pattern awareness, perceptual awareness, and auditory awareness. He also believes that music can expand the vocabulary and strengthen the love of books (Cohen, 1974).

Kelley (1983) worked with two federally funded summer programs in an inner city elementary school. She researched "two pilot studies integrating the performing arts with the language arts" (p. 84). There was a growth in concept formation, metalinguistic awareness and reading improvement that suggests music activities may facilitate reading and language arts learning in the early reading stages (p. 84).

Many music and reading theories have not been backed by statistical research. Ebisutani (1991) stated that "the research itself is inconclusive but does suggest that music has potential for affecting reading rate and writing fluency" (p. 2).

Reeves (1978) believes that "writing words to songs, whether using traditional tunes or new ones composed by the teacher or students, is comparable to writing poetry, and serves as a helpful way of guiding children toward improvement in written language" (p.78). One may follow up a field trip, story, or film by writing the lyrics to a song about it. This gets the students involved with their

writing by relating it to their activities. Later lyrics can be added to notes forming a song that everyone may enjoy.

Eyes can be shut but ears are not meant to be closed. It is much easier to look away than to close off what one hears. Through listening, music can help to develop and practice acceptable speech patterns (Reeves, 1978). Most musical patterns include repetition as do speech patterns. McCarthy's (1989) theory for whole language learning includes repetition as follows:

Repetition is the child's security in learning. Repetition through speech and music makes the experience more pleasurable and stimulates learning. Adding ostinato patterns of snap, clap, patsch, and stamp to accompany spoken sequences, uses muscular memory to accelerate the process (p.24).

Merrion (1981) compared Max Schoen's nature of musical enjoyment to that of reading enjoyment. Schoen found musical enjoyment dependent upon the following:

- (a) the timbre and tonal nuances of instruments,
- (b) the rhythm,
- (c) the listener's past experience,
- (d) the listener's play of imagery as the music unfolds, anticipating and projecting resolutions,

- (e) the pleasurable mood,
- (f) the intellectual activity of following the unfolding of the musical structure.

Merrion paralleled it to reading enjoyment as follows:

- (a) the vocabulary, usage and innuendo of the language,
- (b) the style, including the flow, pace and transitions within the literature,
- (c) the reader's past experience,
- (d) the reader's play of imagery as the story unfolds, anticipating and projecting events,
- (e) the pleasurable mood
- (f) the intellectual activity of following the unfolding of the plot, themes and characters. (p. 5)

Music and Science

Music is a science. It demands precision. The conductor's score is a chart or graph. Music contains changing seasons, movement in the environment and sounds of living things.

Hollander (1991) stated the following:

Much of nature seems to manifest rhythmic movement. The seasons, the ebb and flow of the tides guided by the cycles of the moon, our heartbeat, the breathing, the life cycle of plants, the beat of wings, life and death itself-all are rhythms, cycles and

pulses. (p. 126)

Griffin believes that the science musical is a wonderful way to teach science concepts. She designed the lyrics to accompany her middle-school ecological course. A composer colleague helped to set the words to music. "Learning became a pleasure as they [students] danced and sang ecological principles and painted scientific designs" (1987, p. 19). Students later remembered answers on the traditional paper and pencil test by humming or singing the songs to themselves. Dr. Greg Stefanich, a professor at the University of Northern Iowa, stressed the importance of students actively learning. This concept was demonstrated in a presentation during 21:141g, Integrated Activities and Materials in Elementary School Science and Mathematics. Music could act as one way to facilitate active learning in science and math.

Music and mathematics

Music is mathematical. Meter is based in groupings of two's and three's. The beat and divisions of the beat relate directly to mathematics. Space, shapes, time, and numbers are also employed in music. Speed, volume, size, length, weight, and distance are important skills in music. Arithmetic can be protected against mundane rituals by integrating musical activities.

Music, History, and Social Studies

Music is history and social studies. It reflects the world, creation of our country, and other countries. Folk songs are valuable in reflecting other cultures. Patriotic songs are effective in teaching principles, concepts, attitudes, and values of the history of our own country.

Lane (1981) felt that country music was an exceptional way to teach children. "Country music's origins are in the folk songs of the southern mountain people" (p. 3). Folk songs and country music have a story to tell about hopes, dreams, and experiences. "Since country and folk music have a story to tell, primarily about people, the song lyrics can easily be used in the same way as traditional material in the teaching of reading" (p. 3).

Music and Physical Education

Music is physical education. Balance, coordination, body image, awareness, laterality, directionality, and eye-hand coordination are all required in music. It is also important to have control of the diaphragm, back, stomach, and chest.

Music and Art

Music is an art. Music is aural while art is visual. Moods and colors in art are related to these same concepts in music. Musical forms present geometrical designs as contained in art.

Current Pilot Programs

Learning To Read Through the Arts

Collett's (1991) article discusses how students have demonstrated growth in reading and writing abilities through the Learning to Read Through the Arts (LTRTA) program. She cited Dale Mann as saying "children retain twenty-four percent of what they hear, forty percent of what they see, and seventy percent of what they learn through multisensory experiences" (p. 42). Zinar (1976) believes that music provides that multisensory learning. The arts are used as the main approach to learning all subjects in LTRTA. "In LTRTA, the arts are the primary vehicle for teaching reading, writing, thinking and communication arts, and for integrating science, social studies, and other content areas" (Collett, 1991, p. 42-43). The teachers must go through a specific training program. LTRTA started as a Title I program in New York City but has since then expanded. It is recognized as successful by the United States Department of Education, the New York State Education Department, and the New York City Board of Education. Collett (1991) describes LTRTA as follows:

It is the music curriculum that provides the developmental and sequential teaching of music as a content area. Viewed from the LTRTA perspective, a well-taught, sequential music

curriculum not only results in music learning that has inherent value, it also gives students the chance to listen, think, react, see, touch, and move. Instruction in music skills, music appreciation, and music history also provides a wealth of learning strategies that enhance children's analyzing, synthesizing, and evaluating skills. The students learn to process information and transfer knowledge through these concrete, kinetic, and cognitive experiences. (p. 43)

Rap

Hicks inferred that there was a relationship between an oral rhythmic style of communication (rap music) and learning in the urban preschool. "The lyrics rhyme, have rhythm, and are repetitious. Consequently, they are easy to learn through daily practice which sometimes occurs from frequent exposure" (1987, p. 3). She proved that music creates a fun atmosphere for learning since the results favored the group that received instruction through rap music.

Suggestopedia, Soviet Sleep Learning and Tomatis

Suggestopedia (superlearning), Soviet sleep learning, and the Tomatis method are very similar. They all use relaxation, rhythmic verbal suggestion, and synchronized baroque or classical background music.

Suggestopedia was developed in Bulgaria in the 1960's by Dr. George Lozanov, a medical doctor. Lozanov's approach is "reportedly used in the [former] Soviet Union and in Bulgaria" (Zeiss, 1983, p. 3). While teaching a foreign language using Suggestopedia meditation, the class breathes deeply and rhythmically while the teacher reads the language material to the beat of baroque, slow music with sixty beats to the minute (Bancroft, 1981). SALT, which is an educational society in Iowa, provides training in Suggestopedia.

The Tomatis method was developed by Dr. Alfred Tomatis, a medical doctor, in the 1950s in France. Tomatis founded his method as a system for treating dyslexia and for teaching foreign language after researching the ear and the voice (Bancroft, 1982). The importance of intonation and a rhythmic presentation was stressed by using a women's voice. The "Tomatis Effect" has to do with one vocally reproducing only what one can hear.

"Soviet hypnopedia is said, by its' advocates, to improve memorization and performance to cut down instruction time by one-half" (Bancroft, 1981, p. 15). The original statistics said that hypnopedia speeded up learning five to fifty times.

Bancroft (1981) analyzed it as follows:

The lyrical and rhythmic music, the artistic and rhythmic rendering of the text by the teacher, the rhythmic deep

breathing, and meditative state of the students contributed to a marked decrease in fatigue and tension and a marked increase in the memorization (or the absorption) of the appropriate lesson materials. (p. 15)

Although there can be benefits to Suggestopedia, Soviet sleep learning, and the Tomatis method, the scant research studies seem to be inconclusive. Students have learned at much the same rate and memory retention whether educators used one of these three methods or a traditional way of teaching foreign language.

Accelerated Learning

Accelerated learning is a new way for foreign language educators to teach language in much the same way as Suggestopedia. Dr. W. Jane Bancroft, a teacher at the University of Toronto, is responsible for the early dissemination of the Lozanov method in the Western World. After training with Dr. Lozanov, Dr. Dhority from the University of Massachusetts developed Accelerated Learning or the suggestive-accelerative systems called ACT. "Accelerated learning is a new way of looking at foreign language teaching in that it seeks to provide a holistic or whole-brain approach intended for the complete individual and is our model for learning" (Cullen, 1987, p. 4).

Background music

The research reviewed discussed how listening to music while working affects productivity. Wohlwill (1981) translates from Piaget as follows:

Piaget admitted to listening to classical music while working on a problem, either for general stimulation (for which he preferred dramatic selections such as the death of Boris from Boris Goudinoff) or for construction, i.e., intellectual inspiration, for which he would choose highly constructed music such as Bach. (p. 124f)

Roe (1984) cites that a Swedish survey taken in 1984 reports that sixty percent of adolescent pupils have music playing as background while doing homework (p. 6). They found that music was a major area of interest by the time students reached puberty. Roe (1984) stated that in their study "the results showed that the higher their school achievement, the more likely they were to express a liking for classical music" (p. 22). He continued by saying "the failures move instead towards socially disapproved of and oppositional forms of music" (p. 24). The highest correlation in Roe's study was between negative school commitment and the use of music to prevent boredom while studying homework.

Cohen (1974) endorses that "listening to all kinds of music-- classical, semiclassical, jazz, popular-- will increase auditory

discrimination" (p. 61).

Music listening ideas include lullabies, folk dances, marches, choral groupings, and orchestrations. Freeburne and Fleisher (1952) conducted a study to determine whether specific types of nonvocal music (classical, semiclassical, popular and jazz) had a significant effect on reading speed and comprehension. Ebisutani (1991) declared of this study that "results indicated no significant differences in the groups except the jazz group read faster than the control group" (p. 14). Although most research is inconclusive on music's distracting effect on reading, "the researchers suggest that because classical music has subtle rhythms and hidden melodies it may not be listened to as closely by the students, whereas, popular music's simpler, and more obvious rhythms and melodies are more easily grasped by a group of subjects" (Ebisutani, 1991, p. 13).

Rhythm is used in educating students today. While teaching numbers and letters, Sesame Street introduces them in a rhythmical, flashing fashion. Improvised Musical Play (IMP) is a teaching strategy using simple rhythms with chanting and singing (Greensberg, 1991). Marva Collins currently promotes the use of rhythms through mnemonics, while teaching in the Westside Preparatory School in the inner city of Chicago, Illinois. This concept was presented in a lecture during 21:243 Analysis and

Improvement of Social Studies Instruction in the Elementary School
by Dr. Mary Nan Aldridge.

Practical Music Activities for the Elementary Class

Mnemonics

"Mnemonics is a memory-aid technique that enables a learner to organize new information through a transformation or recording process" (Shehan, 1987, p. 118). Gfeller (1986) suggests that "one appropriate use of musical mnemonics might be in memorizing factual information such as times tables or social studies facts, which can be set to catchy tunes" (p. 28). One such chant used in spelling is "i before e, except after c" and in math we say "six times eight went through the gate and came back as forty-eight." Cohen (1974) suggests that "rhyme completion is a good way to get the children to listen more sharply and to think ahead and anticipate" (p. 61). Children sing their ABCs to music while learning the order of the alphabet. This truly demonstrates the effectiveness of music as a memory aid through the years.

Activities

Poems and verses set to music promote retention of it for a longer period of time. Many people recall musical poems before other poems. Many Bible camps and churches teach Biblical verses through songs. Television commercials try to sell their products

through the unforgettable "jingles". These "jingles" can be rewritten using words to be learned like the order of planets. These practical ideas are only useful if the student understands how to apply it and when to use it.

Renegar (1986), Cohen (1974), and McDonald (1975) included ideas for integrating music and reading skills. Renegar separated the sections under the headings: language reception, auditory, visual, context clues, language structure and syntax, oral interpretation, affective domain benefits, music application for adolescents, and reduction of interference. Cohen gives ideas for moving to music. For example, while moving to the Canadian folk song, "Up, Up in the Sky," a child can fly with his or her arms and later learn directions like flying east, south, north, or west. McDonald suggested that students create a song about the learning situations of the day. "The creative teacher can carry on singing conversations about daily events with the children. What can be said can also be sung, and often pitch and rhythm can provide a vividness to the experience which may not easily be provided otherwise" (McDonald, 1975, p. 875).

Books with repetitive refrains can be put to music to provide students with a melody to join with the refrain. This would work well with such books as The Gingerbread Man, The Three Little Pigs,

or Billy Goats Gruff (McDonald, 1975). Musicians, illustrators, and publishers are continuing the genre of children's literature which takes traditional nursery rhymes, illustrates them, and notates the song in the back of the book. This way, children can either read, and/or sing the stories at their choosing.

Other articles of application included Kennedy (1985), Reeves (1978), Lane (1981), and Cardarelli (1979). Kennedy (1985) found parallels between reading and the arts, writing and the arts, mathematics and the arts, social studies and the arts, science and the arts and foreign language and the arts to establish interest in expanding instructional methods. His article includes ideas for crossing the curriculum. Reeves (1978) gave ideas to teach listening and language skills at early elementary levels. Lane (1981) gave different suggestions for using country music in the classroom. Cardarelli's (1979) article included twenty-one ways to use music in teaching the language arts.

Conclusions

Music has become a natural part of our existence. Since rhythmic synchrony, musical sound, and speech patterns are a part of daily life from infancy to old age, it should be necessary that we investigate the use of music in learning. Maybe it is time that we deal with the most basic part of education throughout history--music.

Through the literature reviewed, we have seen that music played an important part in ancient societies. Whose responsibility is it to integrate music as it was in the past? Some may leave this responsibility to the music teacher. The author believes that the responsibility can be a part of the content classroom curriculum if the classroom teacher has a musical background that would benefit the students.

Each content area can be affected in some way with the use of music. Interdisciplinary units are one way to reinforce and encourage learning. Marshall & Garner (1983) found in their study that students using arts integrated curriculum learned more than the control group that used a regular non-integrated curriculum. It has been discussed that greater learning could be achieved when both the right and left brain interact with harmony.

Much of the research done on integrating music focused on the effects of music and language. Research in the 1970s found few links of improvement in reading skills, although Sullivan (1979) and Zinar (1976) did find a connection between musical ability and reading ability in their research. Yaakob (1973) and McDonald (1975) present what they believe to be similarities between music and reading in their theoretical articles. Brandt (1986) did a statistical study on music facilitating auditory sequencing skills and found an

improvement in the experimental group with increased general music instruction. Other areas that could be researched involving music and language include the following: visual discrimination, direction, imitation, interpretation, voice expressions, listening, letter sounds, word recognition, word meanings, word pronunciation, attention span, speech patterns, and creativity. Kelly (1983) did find a growth in concept formation, metalinguistic awareness, and reading improvement with the use of music activities, but many theories have not been backed by statistical research. We may be missing a piece of the puzzle by avoiding study of the potential of music on the young learner.

Research studies are limited in the use of music in facilitating learning in science, math, history, social studies, physical education, and art. Parallels were stressed previously in this paper with theoretical emphasis. There is a need for more research studies in these areas since we may be missing a link in the chain of use of music in these areas of learning.

Current pilot programs that have proved to be effective include Learning to Read Through the Arts (LTRTA), instruction through rap music, and mnemonics. The scant research studies are inconclusive on the benefits of Suggestopedia, Soviet Sleep Learning, the Tomatis Method, and Accelerated Learning (ACT) which are

mainly used with foreign language instruction.

Exposure to background music in the classroom may be effective for some students today. Roe (1984) found that higher achievers in school express a liking for classical music while failures move toward oppositional forms of music to prevent boredom during study time. Most research is inconclusive on music's distracting effect on reading. It is stressed that classical or wordless music may not distract like popular music with strong rhythms and simple melodies.

There are many music activities in articles of application that integrate music and content classes. Ideas are included under the heading "Practical Music Activities for the Elementary Class" in this paper. There is a need for a teacher's manual that integrates the content classroom with music at all age levels. There are, however, music text books that integrate music into the content classroom.

The review of literature seems to include more theory and articles of application than research. More statistical research is needed to strengthen the inference that music aids in learning. Although there was no evidence that music hinders learning in the content classroom. Educators should explore, develop and gain more experience in the use of music in the elementary content classroom.

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