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Music Learning in the Early Years: Interdisciplinary Approaches based on Multiple Intelligences

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Keywords:

Interdisciplinary approach, music education, early years, qualitative research, multiple intelligences, collaborative inquiry

Abstract:

The unity of knowledge represents an old idea with new manifestations. During the last decades integrated approaches in teaching and learning have become increasingly popular. Applications of integrative approaches between the arts and other school subjects exist in many countries around the world, offering insights into the problems and challenges that such efforts can result into. In this paper a short review of the relevant literature in support of integrative curricula, as well as problems and concerns caused by their application, will set the basis for the description of the practice-based research project that is reported.

The project brought together a kindergarten teacher and two researchers, under a collaborative model of inquiry in a pre-primary school setting in Cyprus. An attempt was made to enrich the teaching of musical concepts through the use of activities and practices borrowed from other disciplines. More specifically, the study sought to investigate whether children's understanding of the music concepts taught was evident, what was the children's response to the designed units and what were the teacher's perceptions of the educational atmosphere before and after the application of the designed units. Six half-hour music lessons, comprising two different units -pitch and tempo- were taught and videotaped. The design of the different units and the organization and choice of activities, apart from drawing from the literature on integration, was heavily based on the theory of multiple intelligences by H. Gardner. A 'follow-up' video stimulated recall interview was conducted at the end of each unit. The videotaped lessons, the observation field notes, the interviews with the teacher, the teacher's self reflection as well as the feedback by the researchers, provided both a wealth of data as well as interesting interpretations. The findings suggest that the pre- primary school children that participated in the study responded with enthusiasm to innovative activities that related music with other subjects. In addition, each child was given the opportunity to better understand the concepts taught through his/her own ways of learning.



Music Learning in the Early Years: Interdisciplinary Approaches Based on Multiple Intelligences

Introduction

Integrated approaches in teaching and learning are increasingly popular, particularly during the last decades. A growing number of research studies already exist, which analyze the theoretical foundations as well as problems and proposed solutions for integrated programs and their application in all levels of education (Beane, 1997; Bloomfield, 2000; Bresler & Thompson, 2002; Carr, 2007; Drake, 1998; Russell-Bowie, 2006; Russell & Zembylas, 2007; Theophilidis, 1997). Integrative and interdisciplinary approaches of the arts with other subjects of the school curriculum have taken many forms in different countries around the world, while, at the same time, generating concerns regarding the meaningfulness of the linkages and connections achieved, as well as the effectiveness of learning.

In this article, a short review of the relevant literature in support of integrative curricula, as well as problems and concerns caused by their application, will set the basis for the description of the project that follows. In a pre-primary school setting in Cyprus, this practice-based research project brought together a kindergarten teacher and two researchers, under a collaborative model of inquiry. The main aim and challenge for the kindergarten teacher was to teach music concepts to her kindergarten pupils, enriching the music lesson through the use of activities and practices “borrowed” from other disciplines, which would renew children’s interest and enthusiasm toward music and, at the same time, support music learning.

Based on Gardner’s theory of multiple intelligences, as well as literature on interdisciplinary approaches to learning, the kindergarten teacher, in close collaboration with the two researchers, designed and applied a number of lessons. Through cycles of reflection, re-design and re-application, a number of conclusions were reached regarding the interdisciplinary nature of the lessons. More specifically, it was evident from the project that true integration is not easy. In the examples described, the observed lessons were interdisciplinary in nature, but not integrative. Although learning in music was evident, learning in the other subject areas was neither obvious nor automatic--unless specifically targeted.

Integration: an old and new idea

The unity of knowledge represents an old idea with new manifestations. As an old ideal, it can be traced as far back as Ancient Greek philosophy. More particularly, Plato, in his *Politeia*, confirmed the current idea that school subjects need to be taught in a way that would maintain their “harmonic unity” relevant to the relationship with each other and the “essence of reality” (Plato in *Chrysostomou*, 2005). Since then, this ideal has been revisited by many educators throughout the years. Among other prominent figures who have supported aspects of the integrative approach during the last centuries are Rousseau and Dewey (Dewey, 1916 and 1934). According to contemporary supporters of integration, the world around us is an unbreakable unity, a complete “whole.” Many everyday activities have an “integrated character” (Matsaggouras, 2003; Theophilidis, 1997). Research supports that knowledge and experience are not compartmentalized, particularly in the early ages (Beane, 1997; Giles & Frego, 2004; Manins, 1994; Wilson, 1998). Therefore, learning should not be offered in small fragmented pieces labeled “mathematics,” “language” or “sciences.”

According to Beane (1997), collecting little pieces of information and skills, organized under different subjects, restricts the power that knowledge can offer, and confines it only inside the boundaries of the separate disciplines. Children's world is one and unified; therefore, meaningful education should encompass the whole person and should aim toward the harmonic development of all aspects of the individual's personality (Theofilidis, 1997). In addition, research regarding the functions of the brain and the way that knowledge is acquired and retained, has shown that the brain resists the acquisition of fragmented information (Ellis & Fouts, 2001). Knowledge is acquired more easily and is remembered for a longer period of time when connections are created between ideas and concepts (Kovalik & Olsen, 1998; Randle, 1997). According to Barrett, "Deep understanding often depends upon the interactions and intersections between the disciplines" (Barrett, 2001, 27).

Howard Gardner's theory of multiple intelligences represents an influential framework in support of interdisciplinary approaches in teaching and learning and has been used to justify the inclusion of the arts at the core of education. Most important, it recognizes music as an important and unique way of learning and knowing. According to Gardner's theory, all eight (at least) separate intelligences are necessary in order for individuals to develop, be educated and able to communicate with the world around them (Armstrong 1994; Gardner, 1983 and 1993; Offutt, 1997). Gardner (1983, 1993, 2000) points out that, apart from recognizing and celebrating these different intelligences, a teacher should aim to provide a wide range of entry points to learning. Gardner's theory, and, more specifically, the multiple intelligences planning questions have influenced the design of the activities in the lessons planned for this research:

How can I use visual aids, visualization, color, art in my music lesson?

How can I involve the whole body in a music lesson?

How can I relate the musical concept with my students' world? (Armstrong 1994, Gardner 2000)

Integrating music and the other subjects

More and more research studies show the importance and uniqueness of the arts in children's lives and education (Campbell, 1991 and 2002). The arts represent ways of knowing, approaches to learning, paths for self-expression, and, above all, integral parts of our being. Arts integration, or "arts cooperation" (Reimer, 2003), is particularly evident in young children. Children at early ages do not separate the arts from everyday activities. They sing and dance spontaneously, experiment with colors and shapes without being afraid of criticism (Chrysostomou, 2004). Integration, therefore, is in accordance with a holistic view of civilization and the world, a creative approach to life that is so natural to children. The arts also represent "frames of mind" (Gardner, 1983), and children can find multiple pathways for engaging with them. Through integrative approaches, children are offered various "lenses" (Bresler & Thompson, 2002), and they can use many "roles" with which to engage with the arts (Reimer, 2003). The nature and quality of aesthetic and creative education that is provided to children through integrative approaches determines the distinctiveness of cultural life and academic performance in school (Bloomfield, 2000; Bresler & Thompson, 2002; Eisner, 2002; Russell-Bowie, 2006).

Although integration is widely supported, its application in the arts raises concerns (Hetland & Winner, 2000; Veblen & Elliott, 2000 in Russell and Zembylas, 2007). According to a longitudinal study conducted by Liora Bresler (1995) in

primary schools in Illinois, where integrated programs were in use, the integration of the arts with other areas of the curriculum fell under the following categories:

The subservient approach in which the arts were used to teach other subjects or make them more interesting.

The co-equal, cognitive integration style, in which arts concepts and practices were combined in various ways with instructional goals from other disciplines. Bresler points out that, although this was the style that was advocated most often in the literature, it was the least common in practice.

The affective style, in which music and the other arts were used to create the mood in the classroom or were seen as an outlet for children's creativity.

The social integration style, in which arts were used to build school spirit, provide a form of community relations or enhance social functions.

It is interesting to note that in all of the above practices no goals or targets related to the arts were pursued. Even in the second category, the co-equal cognitive integration style, some concepts and practices of the arts were used, but, ultimately, the goals pursued belonged mainly to other disciplines. Arts integration became arts entertainment (Wiggins, 2001). The arts were used mainly to facilitate the teaching of other subjects.

Integration in the arts needs to be a carefully planned endeavor. A superficial approach to the arts in the name of integration represents a real problem, as mentioned by a number of writers, and observed in many situations (Barrett, 2001; Russell & Zembylas, 2007; Snyder, 2001; Wiggins, 2001).

This type of planning was a challenge to our research project. The kindergarten teacher set music knowledge and understanding as her starting point and priority. It was, therefore, obvious from our observations and analyses that a number of lessons planned and applied fell under Bresler's category of "subservient approach," as far as the rest of the curriculum subjects were concerned. However, through the cycles of reflection and re-application that were included in the research design, we were able to identify certain activities within the lessons that achieved learning in other areas as well.

Keeping in mind all of the above considerations, as well as theoretical currents for integration, and in light of our priority on targeting music knowledge in the designed lessons, Gardner's theory presented a more reasonable rationale for this study. Therefore, in an interdisciplinary framework which can be considered a first step in creating connections among subjects, the objective was to create interesting lessons, include engaging activities that would raise pupils' motivation, and, at the same time, offer multiple paths for learning, utilizing the different intelligences to teach music.

Methodology

The study of real life educational issues is, according to Robson (1993), often a "messy" situation, since educational processes are neither linear nor straightforward and differ from context to context. Therefore, the focus of educational research (general and music) during the last three decades has shifted, concentrating mainly on the investigation of school processes in close collaboration with the teachers, attempting to change some relationships and norms of teaching that influence children's learning (Angelides, 2001). Following this trend, practice-based research is, nowadays, at the forefront of arts research thinking, and researchers are called to cooperate with practitioners and deal with issues and variables in a flexible and open way (Odam, 2001). These flexible methodologies bring researchers closer to "real-life

situations” (Robson, 1993) and allow teachers to function as vital elements of that process (Angelides, 2001).

The present study arose from both the need and wish of a practicing kindergarten teacher in a Cypriot public school to enrich and differentiate the standardized music lesson and delve into musical concepts through the use of innovative practices besides the listening, performing and composing musical activities. Harris, the Cypriot kindergarten teacher of our research team, was, at the time of the study, an enthusiastic beginner pre-primary schoolteacher, whose musical knowledge and skills were limited to the ones gained during school and her undergraduate degree as a pre-primary school teacher, but her passion and love about music and the subject of music were remarkable. She initiated discussion with the researchers, one of them her music methods course instructor at the University, in which she expressed her wish to enrich and differentiate her music teaching and explore musical concepts through the use of novel practices.

Based on current trends in early childhood music education, as well as studies and literature suggesting that music education is effective when based on the integrated approach, the two researchers suggested a solution along that path (Andress, 1997; Bloomfield, 2000; Bresler & Thompson, 2002; Campbell & Scott-Kassner, 1995; Russell-Bowie, 2006). They also suggested practices based on Gardner’s theory of multiple intelligences as a possible way to experiment with a greater variety of activities and ways of teaching and learning, which Harris accepted after identifying its strong relation to her own ideas and teaching style.

The collaborative model of inquiry was found to be the most appropriate approach to follow in this study, in order to allow theory and practice to “confront and question one another in an on-going dialogue” (Ainscow, 1999, 39). In the literature, the researcher--often called “the outsider”--acts as a critical friend to schools and teachers, contributing to the understanding and improvement of the educational practice (Ainscow, 1999). Accordingly, in collaboration with the Cypriot kindergarten teacher, the two researchers assumed the role of “critical friends” and attempted to investigate the effectiveness of teaching music through a combination of activities that are not typically used in a music classroom, but, rather, approach music learning through various representations. More particularly, their interest was focused on children’s understanding of the musical concepts taught and their response to the activities, as well as the educational atmosphere created in the classroom.

A series of lessons was designed to target musical knowledge, concepts and skills with the use of activities and practices found in other disciplines. Taking into account Gardner’s theory, the activities were planned in a way that would utilize different intelligences. A reflection process followed each lesson, offering the opportunity to both the researchers and the teacher to review the lesson and make changes before the next one was applied.

The study sought to investigate the following questions:

- Was the children’s understanding of the music concepts taught evident?
- What was the children’s response to the designed units?
- What were the teacher’s perceptions of the educational atmosphere before and after the application of the designed units?

Empirical Data

The main study took place in a kindergarten class with 24 five year old children in a public kindergarten school in Nicosia, in May 2004. The kindergarten teacher, in collaboration with the two researchers, designed two units. Each unit

included three 30-minute lessons targeting two basic music concepts: Pitch (three lessons) and Tempo (three lessons). Both units were taught to children in a period of three weeks (two lessons per week).

The kindergarten teacher and the two researchers discussed a number of possible activities. The Early Childhood Curriculum in Cyprus was used as the basis. Concepts and skills, context and activities from all subjects, other than music, included in the official document, were carefully considered, and the final selection of activities to be included in the designed units was made, taking under consideration the following:

- The specific music concepts needed to be taught and enriched
- Identification of strong connections between the above music concepts and concepts in other subjects, where applicable
- Interesting activities borrowed from other subjects, unusual for a music classroom
- Representation of various intelligences (Gardner)

The research procedures used for data collection and analysis were as follows:

1. Six half-hour music lessons were designed and taught by the kindergarten teacher and were videotaped by one of the researchers, while the second researcher observed and kept field notes. The field notes attempted to describe the atmosphere created in the classroom, children's responses and participation in the activities, as well as the teacher's reactions and responses during the lessons.
2. At the end of each half-hour lesson, the teacher wrote down her own reflections on the teaching and learning that occurred. She discussed those points with the researchers, who in turn gave their own feedback to the teacher regarding the lesson observed. These discussions were helpful in planning the lessons to follow. At the end of each unit, the two researchers conducted a video-stimulated recall interview with the teacher (Calderhead, 1981; Dunkin, Welch, Merrit, Phillips & Craven, 1998; Lyle, 2003). Key points in the lessons identified by the teacher and the researchers after each lesson and each unit were related to children's responses, classroom atmosphere and music learning, in the light of the new practices implemented.
3. At the end of the study, the two researchers, together with the kindergarten teacher, reviewed the complete footage and reflected on the main questions and issues mentioned above, as well as the problems and the experiences from the implementation process.

The videotapes, the video stimulated recall interviews with the teacher and the researchers' field notes served as primary data sources. The videotapes were used to make accurate transcriptions of the teacher- children dialogues, review children's response to the activities and record data of verbal and nonverbal interactions. Data sources also included the six lesson plans used, the teacher's self- evaluation and the researchers' feedback for the teacher.

Presentation of the main activities borrowed from other disciplines included in the music lessons

The binary concepts of "high – low" and "fast - slow" were selected to be taught. However, due to space constraint, and in order to avoid superficial presentation and analysis of the data, we decided to restrict ourselves to a thorough description and analysis of the findings drawn exclusively from the teaching of the concepts "high" and "low".

Initial activities included standard musical activities, such as listening to recorded music using different pitches, singing a song with high and low pitches, recognizing voices or movement of certain animals in relation to pitch, moving at different levels following recorded music with obvious pitch changes in melody etc. The lesson continued with activities and tools directly “borrowed” from other disciplines, adjusted to the needs of the music lesson. In terms of Gardner’s theory of multiple intelligences, the activities used for the lessons were selected so as to target different intelligences. Accordingly, naturalistic intelligence (knowledge of animals’ basic characteristics, use of sizes and lengths), visual-spatial intelligence (graphic scores), kinesthetic (using movement in order to follow music), logical mathematical (categorization), verbal intelligence (enrichment of vocabulary related to the concepts taught) and musical intelligence (use of sounds, instruments) were used. The following are some of the main connections.

Music and Movement

Music was connected with movement through a number of different activities covering targets in the discipline of Physical Education. Through movement, a more kinesthetic understanding of abstract musical concepts like “high” and “low” of pitch was attempted. Connecting recorded music with animal movement is a very common activity in early childhood music class, and its application in this case was also very successful. However, we looked for additional activities common in physical education, which we could use to target the understanding of the musical concepts mentioned earlier.

Stohefsi, the Greek word for throwing an object toward a target, is a skill taught to five year old children through basketball and football. We borrowed activity training for *stohefsi* and used it to teach the concept of pitch. Two hoops were placed vertically at two different levels representing “high” and “low” and children had to aim for the correct one, according to the music they heard. By drawing from knowledge and skills that children had acquired from the discipline of physical education-- throwing a small pillow at targets located at two levels--we targeted the kinesthetic learners to approach the musical concepts of “high” and “low” through their own way of learning. During the activity, the teacher encouraged children to remember the skills they had practiced throwing at targets in physical education activities and then used similar language to direct this activity and connect the different heights of the hoops to high and low parts of the music heard. Indeed, children responded enthusiastically, and although they initially seemed a bit reluctant and unsure, very quickly started enjoying their successful performance. In addition, this activity offered the kindergarten teacher the opportunity to directly evaluate and receive immediate feedback regarding children’s understanding of the musical concept of “high” and “low.”

Creation of Graphic scores

Children were encouraged to develop a personal notation with the creation of graphic scores while listening to high-low sounds. This activity was designed in order to help children with a strong visual-spatial intelligence to understand the new musical concepts through their highly developed intelligence. An example of the process through which the activity was refined and adjusted to the age-group follows:

The kindergarten teacher showed two different graphic representations for which the children were asked to choose the correct graphic score for the sounds heard. However, when she followed this introduction with an activity where children

were asked to draw vertical lines on the upper or bottom part of a piece of paper according to the sounds heard, it was obvious that the children could not connect the meaning of high and low with lines on a paper. The line was a symbol not concrete enough for their understanding. They needed something clearer, an image that they could readily associate with high and low, a picture from their everyday life.

Therefore, the teacher initiated a discussion during which children made many suggestions for graphic representations, such as airplane, star, bird and sun for high sounds, and fish, car, tree and flower for low sounds. Finally, they all agreed to use the flower for low sounds and the sun for high sounds (naturalistic and visual intelligence) and decided that the sun should be up high on their page and the flower down at the bottom. The activity was something new for the children, and they were very enthusiastic. It also offered the teacher the opportunity to evaluate the children's musical learning and understanding of the concept "high-low".

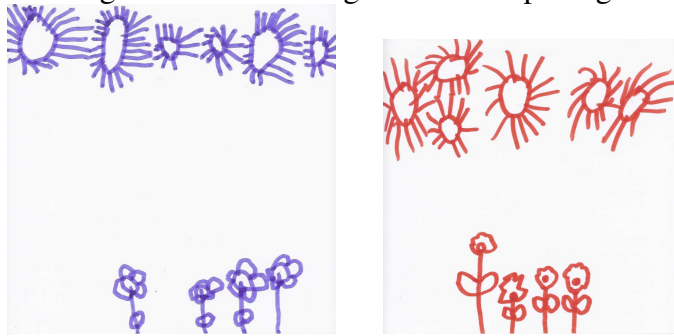


Figure 1: Children's visual representation of "high" and "low"

Music and Science

Science and music are two disciplines that are closely connected, especially in the area of sound qualities. "High" and "low" is a pair of concepts that are taught in both disciplines in early childhood curricula. The size of the object that creates the sound is a determining factor influencing pitch, and children are taught in science that the bigger the object, the lower the sound. Based on this approach, we used the father teddy bear and the baby teddy bear and two excerpts from a violin and a double-bass piece and asked children to imagine which extract would be the song for each teddy bear. Hence, we connected the two pieces of music with the instruments' pictures. We were concerned that children would connect the father teddy bear, the taller one, with the higher pitch, but our fears were not realized. Children immediately connected the low sound with the voice of the father teddy bear and understood the correspondence of the size of the instrument to the size of the teddy bears. At the next level, we compared two bars of a chime bar instrument of different length, and the children guessed which one produces a high sound and which one a low sound; then they listened to the sounds. This activity was a truly integrative one as learning was occurring in both music and science.

Presentation and Analysis of the findings

Collecting data through various methods, such as interviews, the teacher's written reflections and researchers' feedback, the videotaped lessons, as well as field notes, allowed a more objective picture of what really had happened in the music lesson and how all participants felt and thought about it. The researchers engaged in several layers of data analysis (LeCompte & Schensul, 1999). The videotaped lessons were the first level of analysis. The researchers watched the video footage of all lessons, made a transcription of the dialogues and wrote notes regarding the children's

participation, evidence of understanding, response to the activities and the classroom atmosphere. At the second stage, field notes, reflection and feedback input were also analyzed in terms of relationships and common themes among the videotaped lessons transcriptions. The third level of analysis included the analysis of the interview transcripts. The key themes identified by the researchers, once final coding of the whole set of data was complete, were categorized under the following titles, framed by two dimensions drawn from the research questions:

- 1) Children's evidence of understanding;
- 2) Children's response and classroom atmosphere.

Children's evidence of understanding

Understanding is a word that has been given a variety of meanings. In literature, it is suggested that "Understanding is a matter of degree," it "takes time and practice" and "is revealed through diverse performances and products" (Wiggins & McTiche, 1998, 40). For the purposes of this research, we accepted that if one is able to use, transmit and connect knowledge from one domain to the other, this would reveal understanding. The connections made among common concepts found in the various subjects, or through adjustment of teaching practices borrowed from disciplines, is one of the factors leading to deeper understanding, as the concept taught does not stay abstract in the children's minds, but is applied in practice through a variety of experiences (Matsaggouras, 2003).

The data collected in this project revealed some interesting points regarding the dimension of understanding. During this project, we observed children effectively demonstrating understanding of the music concept "high" and "low" through graphic scores, activating children's visual-spatial intelligence. This was not an integrative activity, as no visual art concepts or skills were targeted. Nevertheless, at the end of the activity we collected children's graphic scores and counted 19 out of 24 that had successfully transferred the musical information they had heard on paper, by drawing the symbols for high and low sounds in the correct order they had been played.

Other children achieved targeting at a high and low level with the pillow following high and low music excerpts. As we reviewed the footage from the videotapes, it was obvious that, for some children, the particular activity was easier than for others, presumably those children who are kinesthetic learners. Some children made instantaneous connection between the height of the sound heard and the height of the loop, while others needed a few moments, or more than one attempt, to think, hear and then decide where to throw the pillow. By the end of the activity, on their fourth attempt, 16 out of 24 children managed to respond to the music heard with the correct action.

Some children seemed to understand the "high" and "low" concepts better through strictly musical activities, while others appeared to understand the sound quality of pitch through its integrative connection with science. Here follows an excerpt from the transcript of a teaching session involving Mathew, a very shy boy who avoided eye-contact with the teacher most of the time, and the teacher, who used two different musical excerpts from violin and double-bass, two different size bars from a chime bar and two pictures of the father teddy bear and the baby teddy bear. The two musical excerpts were heard starting with double-bass and followed by the violin.

Teacher: Which teddy bear do you think is talking first, the father or the baby and which second?

Mathew: Looks at the teacher and stays silent

Teacher: Well, Mathew, listen again to the two sounds, close your eyes and try to imagine. Who talks first.
Mathew: The father [and speaks with a “low” voice] and then the baby [and speaks with a “high sound.”]
Teacher: What do others think? Do you agree with Mathew?
Jenny: Yes, the father talks with the low voice and the baby teddy bear with high.
Teacher: Well done to both of you. Now, let’s listen to the sound of these two chime bars. Could you guess which the father is and which is the baby? [The teacher plays the high sound first and then the low]
Andreas: Now the baby is first. It was first the high sound and then the low sound.

And the discussion led to some generalizations connecting music with science. The children ended up realizing that the size of an object has a strong relation with the pitch.

Teacher: Who can tell me something about these two chimes? Are they the same or different?
Anna: The same. Both are grey and look alike.
Peter: Yes, but one is big and the other is small.
Teacher: What about the sound they make? Is it the same?
Stuart: No, one makes the sound of the father and the other the sound of the baby.
Teacher: You are very right Stuart. Do you think you could tell us, which one makes the sound of the father teddy bear, the big or the small?
Stuart: Can I try? [and hits both chimes]. The big, the big, listen to it [and hits again the longest chime].
Teacher: Very well Stuart. The long chime bar makes the low sound and the short makes the high sound. Now, I will ask you a very difficult question. These are the two violins that played the melody of the father and the baby. Do you think you could tell which instrument played the melody of the father and which the melody of the baby?
Maria: The big one was for the father, I think, and the little one for the little baby? Like the chime bars. The big was the father. The big speaks like fathers, with a low voice.

The teacher was impressed by the effectiveness of the activities on the children’s understanding. In her own words, taken from the interview conducted at the end of the unit on pitch, she describes her experience:

In theory it sounded nice. In practice it was even better. They all gained an understanding of high and low and each child got a clearer understanding from a different activity that best suited to him/her. And I am quite sure that they understood the concepts high and low. I checked with so many ways, with so many activities, with using the pillow in the schoolyard, with drawings, with science.

Children’s response and classroom atmosphere

The children’s response and enthusiasm was another important aspect of the study. The teacher considered those units that were enriched, with an interdisciplinary lens--a real challenge. Her enthusiasm was easily transmitted to the children during teaching. Her reflection of the experience:

Due to the fact that music is my favorite subject, although I do not have any specialized skills or knowledge besides those gained at school and university, I enjoy trying new things and experimenting in activities and teaching tools. However, it was the first time I followed systematically this approach in my teaching, and, honestly, I was thrilled by the results. The classroom atmosphere was so nice, children showed great enthusiasm and their response to the activities and discussion was much wider and much more enthusiastic than previous times when I taught with a more traditional way, you know, singing and listening and instruments and movement. Regarding pure musical activities, children’s response was as expected; they participated but not all of them with the same enthusiasm. I saw those children that love music trying their best, whereas, children that usually do not participate with enthusiasm kept the same attitude,

The teacher continues:

When I started with activities using tools and practices from other disciplines, the picture immediately changed. I saw children changing attitude towards the subject and participating with excitement in the activities. The most beautiful moment of the lessons “high and low” was to see Michael, who is always bored, to enjoy throwing the pillow and Andreas, who keeps talking and talking, to be so concentrated when listening to sounds and drawing suns and flowers. What I gained from this experience? I know now that the use of practices from other disciplines in my teaching led to high effectiveness, more participation and fun.

And she explains why, in her own words:

I believe this happened because all children could see a music lesson taking place in front of them that appealed to different tastes and abilities, different intelligences, a lesson completely different from the ones they have been used to, enriched and fun, quite unexpected with a great variety of activities and domains covered.

Implications for practitioners

From the review of the literature, it is evident that music is often connected with other disciplines in different types of integrated programs. Teachers usually borrow activities and tools from music in order to teach other disciplines.

This research project claimed that teaching music concepts could be enhanced by complementing musical activities with additional ones “borrowed” from other disciplines. The findings of the project support our hypothesis. The ease with which children responded and showed understanding of newly introduced musical concepts, as well as their enthusiastic participation and obvious enjoyment, indicate that musical learning can be enhanced when carefully chosen, and planned activities, practices and tools from other subjects are included in the music lesson.

Implications of this study for pre-primary school teachers are extensive. No one doubts the fact that education today is in a state of constant flux. Change is part of the agenda all over the world. Through continuous developments and altered environments, it appears that integrated curricula offer all the basic qualities that are pursued in a curriculum (Laevers, 2004):

They respect the child and his or her unique characteristics.

They utilize an open framework approach in teaching.

They provide a rich environment where children use a variety of tools and disciplines in different activities and environments.

They help children represent through images of everyday life abstract concepts.

They strengthen communication through interaction between their peers and the teacher.

The current project attempted to follow the aforementioned “guidelines” and, at a significant level, managed to enhance musical learning through activities that are not typically found in a music lesson. One of the dangers regarding integration is the possibility of weakening music teaching through non-musical activities, to miss musical learning altogether and instead teach science and physical education without any direct connections to musical objectives. And indeed, that was something that worried the kindergarten teacher of the present study, as she admitted in the interview. Despite her worries, though, practice showed that the selection of activities served their purpose. As was evident from this study, children were thrilled at the experience

of a different music lesson. Musical concepts were approached through activities or concepts in other areas of the curriculum, and music learning took place through various forms and through a variety of activities.

The lessons designed were based on the idea of integration of knowledge, but had not been designed as such. The aims were primarily musical. Activities and tools were “borrowed” from other areas of the curriculum without using their aims or objectives. The result, therefore, was a “subservient” approach of science or physical education or visual art. However, through the cycles of reflection and re-application included in the research design, we were able to identify a number of lessons that achieved learning in other areas as well or assisted children in deepening their understanding in those areas.

Connections among subjects, concepts and curricular areas can improve children’s learning experience. In addition, acknowledging children’s individual differences and offering support by the use of activities covering the various intelligences make it possible to promote quality in the curriculum. It is important to recognize the multiple roles and manifestations of intelligence and adapt teaching to include all of them. As it is widely accepted nowadays that learning and knowledge are not fragmented, it is important to recognize that music and the other arts represent an integral part of our existence as human beings.

Our goal is to have children be happy and content in our classrooms and reach their full potential. If we nurture their enthusiasm to embrace the world as a whole and learn through personal experience, we could achieve that goal.

References

- Ainscow, M. (1999). *Understanding the Development of Inclusive Schools*. London: Falmer Press.
- Andress, B. (1997). Transforming curriculum in music. In: S. Breadkamp & T. Rosegrant (Eds) *Reaching potentials: transforming early childhood curriculum and assessment, vol. 2*. Washington D.C.: Naeyc.
- Angelides, P. (2001). Educational research in Cyprus: towards a collaborative model of inquiry to make sense of schools and their cultures. *European Journal of Education, 36 (1)*, 67-76.
- Armstrong, T. (2000). *Multiple Intelligences in the classroom*. USA: Association for Supervision and Curriculum Development.
- Barrett, J. (2001). Interdisciplinary work and musical integrity. *Music Educators Journal, 87(5)*, 22-26.
- Barrett, J., McCoy, C. & Veblen, K. (eds) (1997). *Sound Ways of Knowing: Music in the Interdisciplinary Curriculum*. UK: Schirmer – Thomson Learning.
- Beane, J. (1997). *Curriculum Integration: Designing the core of democratic education*. New York: Teacher College.
- Bloomfield, A. (2000). *Teaching Integrated Arts in the Primary School. Dance, Drama, Music and the Visual Arts*. London: David Fulton Publishers.
- Bresler, L. (1995). The Subservient, Co-equal, Affective and Social Integration styles and their implications for the arts. *Arts Education Policy Review, 96*, 31-37.
- Bresler, L. & Thompson, C. M. (eds) (2002). *The Arts in Children's Lives*. London: Kluwer Academic.
- Calderhead, J. (1981). Stimulated recall: a method for research on teaching, *British Journal of Educational Psychology, 51*, 211-217.
- Campbell, P.S. (1991). *Lessons from the World. A Cross-Cultural Guide to Music Teaching and Learning*. New York: Schirmer
- Campbell, P. S. (2002). The Musical Cultures of Children. In: L. Bresler & C.M. Thomson (Eds) *The Arts in Children's Lives: Context, Culture and Curriculum*. London: Kluwer Academic.
- Campbell, P.S. & Scott-Kassner, C. (1995) *Music in Childhood*. New York: Schirmer.
- Carr, D. (2007). Towards an educationally meaningful curriculum: epistemic holism and knowledge integration revisited. *British Journal of Educational Studies, 55, 1*, 3-20.
- Chrysostomou, S. (2004). Interdisciplinary Approaches in the New Curriculum in Greece: a focus on music education. *Arts Education Policy Review, 105 (5)*, 23-29.
- Chrysostomou S. (2005). *Music in Education: The Dilemma of Interdisciplinarity*. (in Greek.) Athens: Papagrigoriou-Nakas.
- Dewey, J. (1916). *Democracy and Education*. New York: Free Press
- Dewey, J. (1934). *Art as Experience*. New York: Putnam

- Drake, S. M. (1998). *Creating Integrated Curriculum*. Thousand Oaks, CA: Corwin Press.
- Dunkin, M.J., Welch, A., Merritt, A. , Philips, R, & Craven, R. (1998) Teachers' explanations of classroom events: Knowledge and beliefs about teaching civics and citizenship, *Teaching and teacher education*, 14 (4), 141-151.
- Eisner, E. (2002). *The Arts and the Creation of Mind*. Connecticut: Yale University Press
- Ellis, A. & Fouts, J. (2001). Interdisciplinary Curriculum: The Research Base. *Music Educators Journal*, 87 (5), 22-26.
- Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.
- Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic.
- Gardner, H. (2000). *Intelligence Reframed: Multiple intelligences for the 21st century*. New York: Basic.
- Kovalik, S. & Olsen, K. (1998). The physiology of learning just what goes on in there? *Schools in the Middle* 7, 4, 32-37.
- Laevers, F. (2004). The curriculum as a means to raise the quality of Early Childhood Education: A critical analysis of the impact of policy. Key-note speech presented in EECERA conference, Malta.
- Lyle, J. (2003). Stimulated Recall: a report on its use in naturalistic research, *British Educational Journal*, 29 (6), 861-878.
- Matsaggouras, E. G. (2003). *Interdisciplinarity in School Knowledge* (in Greek) Athens: Gregory.
- Odam, G. (2001). Research in the arts: issues in the development of new and relevant techniques of arts research in music, the arts and arts education. *Music Education Research*, 3(1), 77-86.
- Offutt, E., R. (1997). *An Elementary Teacher's Guide to Multiple Intelligences*. Torrance: CA, Good Apple.
- Randle, I. (1997). The measure of success: Integrated Thematic Instruction. *Clearing House* 71, no 2, 85-87.
- Reimer, B. (2003). *A Philosophy of Music Education: Advancing the Vision*. New Jersey: Prentice Hall.
- Robson, C. (1993). *Real Word Research*. Oxford: Blackwell.
- Russell-Bowie, D. (2006). *MMADD about the Arts. An introduction to Primary Arts Education*. Frenchs Forest: Pearson.
- Russell, J. & Zembylas, M. (2007). Arts Integration in the Curriculum: A review of research and implications for teaching and learning. In Bresler, L. (ed.) *International Handbook of Research in Arts Education*. Dordrecht, The Netherlands: Springer.
- Snyder, S. (2001). Connection, correlation, integration. *Music Educators Journal*, 87(5), 32-39.
- Theofilidis, C. (1997). *Integrated approach in Teaching* (in Greek). Athens: Gregory.

- Wiggins, R. (2001). Interdisciplinary Curriculum: Music Education concerns. *Music Educators Journal*, 87 (5), 40-44.
- Wiggins G. & McTighe J. (1998). *Understanding By Design*. USA: Association for Supervision and Curriculum Development.
- Wilson, E.D. (1998). *Sinalma: the Unity of Knowledge* (in Greek). Athens: Sinalma.