Musical instruments made by small hands: A multifunctional activity at preschools in Turkey

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Abstract

Hand-making musical instruments with children is a widespread crafts activity, and also a strategy to overcome the shortage of musical materials in preschools in Turkey. In this paper, hand-making musical instruments in preschools in Turkey is investigated as alternative to ready-made musical instruments in terms of their strengths and weaknesses, by gathering opinions and insights of 10 preschool educators as experts through semi-structured interviews about the making and using phases of hand-made musical instruments.

Keywords: preschool music, hand-making musical instruments, Turkey

1. Introduction

Early musical experiences play an important role in child development, nourishing not only musical development but also various skills such as problem-solving and creativity. Music is a very powerful tool for preschool educators with which they can design or facilitate joyful activities like drama and group games. In many preschools, children are encouraged to play musical instruments, typically percussions, depending on their developmental level and musical background of their teacher.

Turkish Ministry of National Education provides suggested musical activities along with a list of necessary musical equipment for preschools. Supply of this instruments; however, is difficult especially for low-budget public schools. Making musical instruments such as maracas, drum and castanets by hand is encouraged by the Ministry, and some workshops are organized to introduce preschool educators in these craft processes. Although it is highlighted as a hand-crafts activity and a tool for sound exploration, which is beneficial for auditory and cognitive development of the child, hand-making musical instruments also became a widespread strategy in preschools in Turkey to overcome the difficulties in musical instrument supply.

1.1 Music in early childhood

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Young children develop an understanding of the world through their own experiences. Cognitive development of children is closely related to the exploration of their environment to extend their knowledge about the world (Frost et al., 2008). A playful environment may provide children an opportunity to experience physical qualities of music through instrumental exploration (Tarnowski, 1999). Not only musical instruments, but also unstructured or mundane materials might be media for sound explorations in free musical play of children (Niland, 2009).

According to the musical development theory of Swanwick and Tillman (1986), which is based on Piaget’s developmental stages, preschool period coincides with the personal expressiveness stage. In this period, children tend to manipulate the sound mostly in terms of speed and loudness. Creating basic and repetitive sound patterns is also common. Preschool period is defined as preconventional stage by Gardner (1990) in the arts domain in general, through which children give effort to understand and internalize the symbols system through their own explorations regardless of technical conventions. Concentrating on rhythmic characteristics of music is another musical characteristic of preschool children (Miyamoto, 2007; Martin, 1998; as cited in Zachopoulou et al., 2003).

1.2 Significance of musical experiences

Music is a joyful medium for children, which serves as a source for the development of various skills. Recent developments in brain imaging technologies show that processing music is a very complex brain activity, which requires almost all functions to cooperate (Peretz & Zatorre, 2005; Sacks, 2007). Music differs from an ordinary auditory stimulus through its structural components such as rhythm, tone and melody, which makes its processing in the brain as a multi-layered and sophisticated activity (Jourdain, 2002).

Mostly based on these neuroscientific findings, there has been an increase in the studies showing the potential non-musical benefits of musical experiences such as movement, memory, mathematics, language, creativity and problem solving skills. These studies have been accelerated after Rauscher et al. (1995) published a paper showing that students subjected to a certain piece of music show enhancement in spatial-temporal reasoning, a phenomenon publicly known as “Mozart effect”. A recent study by Mertoğlu (2010) shows that there is a meaningful relationship between general rhythm and mathematical skills of preschool children. Platz (2010) states that music, along with other domains of arts; helps children gain “twenty-first century skills such as critical thinking, creativity, imagination and so on.

There are several studies drawing attention to the relationship of rhythm and movement. Movement is the first expressive response to music, which is evident even in infants as young as 2 years old (Swanwick, 1988). It is also a tool for perceiving music and giving meaning to it (Metz, 1989). Retra (2006) defines the movement of children to musical stimuli as kinesthetic representation, an exteriorization of musical information through bodily actions such as clapping, jumping, marching and so on. According to Sacks (2007), music cognition is closely related to locomotor movement. Even imagining music activates basal ganglia and cerebral cortex, which are the parts of the brain responsible for the motor activities (pp. 240-241).

1.3 Music in preschools in Turkey

In Turkey, Preschool Education Directorate General of the Ministry of National Education provides several official documents for educators, including aims and gains of preschool education as well as suggested classroom activities and materials. Music is an integral part of the program, as both stand alone musical activities and assistant to other daily activities such as drama and creative movement (Republic of Turkey Ministry of National Education, 2006a). Singing, creating rhythm, auditory perception activities are among musical activities defined in the program (p.44).

Necessary musical equipment for each classroom is also determined by the Ministry. These equipments are drums and percussion instruments, which are listed as: two wooden tambourines, two drums, wooden xylophones in two different sizes, five wooden maracas, five hand bells, three sound blocks, four castanets, two steel triangles, and two sets of wooden rhythm sticks (Republic of Turkey Ministry of National Education, 2010). Supply of these equipments, however, is difficult for low-budget schools. Use of more affordable plastic imitations of drums and percussions, which are inferior in terms of sound quality, is widespread. In the Teacher Guide Book, sample auditory perception/sound exploration activities with mundane materials are suggested for educators (Republic of
Turkey Ministry of National Education, 2006b). Hand-making simple musical instruments with children, on the other hand, is a common crafts activity in preschools in Turkey. Apart from being a crafts activity, it has become a strategy to overcome the lack of music materials in the classroom.

This study was conducted as a part of a master thesis study by Sedef Süner, supervised by Canan E. Ünlü in Middle East Technical University Department of Industrial Design, Ankara. The aim was to explore possible design contributions on musical toys to enrich musical experiences of preschool children.

2. Methodology

Participants of the study were eight preschool classroom teachers, one preschool music teacher and one education specialist; from four different schools in total. All participants were women, and currently employed in an educational institution. Nine participants were currently working in preschools in Ankara, and one of them was working in Siirt, a province in southeastern Turkey, who came to Ankara for summer seminar. Semi-structured interviews were conducted as informal conversations with the aid of an interview guide, in classroom or office environment.

3. Results

Hand-making musical instruments was mentioned by all the participants as a crafts activity. According to the participants, crafting process is an auditory exercise for children to explore various sound sources through a hands-on activity, and the end-product is a solution for the difficulty in supply of the ready-made musical instruments. Types, materials and evaluation of hand-made musical instruments are presented below.

3.1 Types and materials of hand-made musical instruments

Five types of musical instruments were mentioned by the participants, which are imitations of their ready-made originals. These instruments are; maracas, drum, castanets, rainstick and guitar. Among them, guitar is the only melodic instrument and the rest are percussions. These instruments are made of waste or mundane materials, which are affordable and accessible by almost all children. Types and materials of hand-made musical instruments as mentioned by the participants is given in Table 1.

<table>
<thead>
<tr>
<th>Type</th>
<th>Frequency</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maracas</td>
<td>10</td>
<td>Container: Waste bottles and boxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ingredient: Dry legumes, bead, button, stone, sand, shell</td>
</tr>
<tr>
<td>Drum</td>
<td>5</td>
<td>Frame: Clay pot, installation pipe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin: Acetate film, paper, rubber balloon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bonder: Adhesives, rubber string</td>
</tr>
<tr>
<td>Castanets</td>
<td>5</td>
<td>Body: Walnut, plastic box, cardboard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bonder: Rubber string (for finger grip), adhesives</td>
</tr>
<tr>
<td>Rainstick</td>
<td>3</td>
<td>Container: Paper towel roll, cylindrical chips box</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ingredients: Beads, dry legumes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barrier: Pin, stick, pencil</td>
</tr>
<tr>
<td>Guitar</td>
<td>2</td>
<td>Body: Waste boxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strings: Rubber string, rope</td>
</tr>
</tbody>
</table>

As given in Table 1, hand-made musical instruments are mostly made of common materials, which children may find in their homes or stationeries. There are variations in material use for particular parts. Maracas, for instance; consists of 2 main parts: a container (body or shaker) and ingredient (to generate noise). Any closed body can be a container, such as an empty PET bottle, a juice box made of cardboard, pillboxes, or a can (Figure 1). Ingredient is even more varied, which effects the auditory quality of the instrument along with the amount of material used, and the kind of container. It is possible to use dry legumes, beads, buttons, sand, pebbles, and even seashells. Rainstick is very similar to maracas, except the container is taller and barriers are added to slow down the flow of ingredients
for a particular sound effect. Castanets, on the other hand, are made of two hard bodies such as walnut shells, and rubber strings are attached to the body for finger grip.

Making drum requires more effort and mastery, and the materials may be less affordable and accessible compared to other instruments. The body is made of a clay pot or a piece of installation pipe, on which a film, paper or balloon is dressed as drum skin. Making guitar also requires a certain level of fine motor skills to attach the strings to the body. These factors make drums and guitars more likely to be a collective classroom activity, which results in a single instrument, rather than crafting instruments for each child.

![Figure 1: Maracas made of various types of containers](image)

3.2 Evaluation of hand-made musical instruments

There are various aspects of hand-made musical instruments as mentioned by the participants when evaluating them. Positive comments (strengths) of hand-made musical instruments are linked to the crafts process, while negative ones (weaknesses) are related to the usage phase of the instruments. Strong and weak aspects of hand-made musical instruments compared to ready-made ones are given below.

3.2.1 Strengths of hand-made musical instruments

Although they are not perceived as complete alternatives to ready-made ones, hand-made musical instruments were stated to be superior to their ready-made counterparts in four aspects. Considering the making phase, hand-made musical instruments present following strengths:

**Personalization opportunities** (8 out of 10 participants): Being a hands-on activity, hand-making musical instruments allow children to select among various types, amounts and combination of materials, along with decoration and labeling opportunities. Hence, each end-product is unique in both visual and auditory qualities. Taking initiative in the decision-making process, children embrace their instruments and use them more satisfactorily.

**Variety of sound** (7/10): Children may explore various qualities of sound such as tone and timbre by combining different types and amounts of materials. Hence, variety of materials in making process of the instrument is reflected upon the richness of auditory experience.

**Accessibility of materials** (6/10): Most of the materials used in making process of the instrument are accessible and affordable for both children and teachers. Waste and mundane materials can easily be combined into simple musical instruments. Furthermore, each child has an instrument ready to be used in musical activities at the end of the crafts activity.

**Transparency of the process for children** (5/10): Although least mentioned, positive impacts of instrument making process for cognitive development of children should not be undervalued. It provides an active learning process, through which children learn by doing. Since there is no right or wrong, they have the opportunity to examine and experiment, make decisions and create a functioning end-product.
3.2.2 Weaknesses of hand-made musical instruments

Despite the advantages of the making process, hand-making musical instruments present particular weaknesses regarding their using phase, depending on the level of craftsmanship. These weaknesses, which take apart them from being complete alternatives to their ready-made counterparts, are given below.

Poor sound quality (4/10): Hand-made musical instruments provide a rich sound variety, however; they are weak in terms of sound quality compared to the ready-made counterparts. It may be compensated in some instruments, such as maracas, since there various types of shakers that vary in tone and volume. Also, making maracas does not require a very high level of craftsmanship. As for drum, it is difficult to gain enough surface tension without a certain level of mastery in craftsmanship, which results in dissatisfaction in sound quality.

Poor visual quality (4/10): The visual quality of the end-product is also highly effected by the level of craftsmanship. Participants showed sensitivity to the resemblance of the hand-made instruments to their originals, which explain the dissatisfaction about the visual quality. Considering the fact that instruments made are not supposed to be inventions but replicas of the original ones, this concern is understandable.

Short life-span (2/10): Both craftsmanship and materials used effect the life-span of the hand-made instruments. For instance, adhesives may loosen, or dry legumes used for maracas or rainsticks may become bug-infested in time. However, it is important to note that durability of hand-made instruments is beyond expectations. Since they are made of waste or mundane materials, they do not cause a considerable financial loss.

4. Conclusions

Early childhood is a very precious period, through which children develop certain skills and understandings by their direct interactions with their physical and social environment. Hand-making musical instruments provide a unique and fun experience for preschool children, which is significant especially for their cognitive, physical and auditory development. In addition to that, it gives the satisfaction and joy of bringing forth a functional product ready for use.

Strengths mentioned by the participants are strongly related to the making phase of the instrument, and these are mainly stated as in favour of children. Weaknesses, on the other hand; are associated with the usage phase of the instruments, also linked to the making process such as craftsmanship and use of materials. Hence, it is possible to say that advantages in the making phase also lead to particular disadvantages in the usage phase. However, these weaknesses do not seem to be major problems, since the participants do not perceive hand-made musical instruments as complete replacements for ready-made instruments. Instead, it is perceived as a complementary activity, and it provides an important experience for children, which they cannot have otherwise.

Although it is a very common crafts activity in preschools in Turkey, hand-making musical instruments with children is not systematically performed. There have been few workshops conducted by The Ministry for preschool educators for this kind of activities. According to the participants, it has almost become a “common sense” and a culture among preschool educators developed as an accumulation, based on observation and individual contribution. Difficulties in material supply due to financial constraints seem to be another driving force behind it. Preschool educators are able to act in their own initiative in the implementation of the preschool program, which results in the richness of activities conducted in the classroom. However, this fact also requires a more detailed research with a broader sample to be able to reveal and reflect the richness of this culture.

References


