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Usage of Intangible Cultural Heritage Elements in Teaching Number Concept for 48-66 Month Old Children

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Abstract. Based on the idea of helping preschool children to develop their cultural self, in this research, we aimed to create sample class activities on the use of intangible cultural heritage elements in teaching the concept of number for the children aged 48-66 months and to present the results of the application. The research group children were chosen with proper sampling method for the study which was carried out in the case study design of the qualitative research methods. The study group consisted of 15 students, 5 girls and 10 boys aged 48-66 months, who were attending the preschool of a government primary school located in the District of Körfez of Kocaeli Province. Within the scope of the research, a total of 39 books including intangible cultural heritage elements were examined and some of the cultural elements were selected. By using these selected elements, specific activities for the concept of number were prepared and applied in the class for a ten-week period by the researchers. According to the data obtained from the control list which was applied before and after the application (as pre-test and post-test), it was found that the students gained the skills of recognizing the numbers from 1 to 10, pairing objects with numbers counting rhythmically and telling the order of objects. It was seen that most of the students were able to identify the jokes, proverbs, idioms, lullabies, rhymes and riddles among the intangible cultural heritage elements and give appropriate examples of them.

Keywords. Intangible cultural heritage, preschool mathematics education, number concept, teaching numbers 1 to 10.

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INTRODUCTION

The term culture, which has become one of the main subjects of many disciplines such as sociology, folklore, history and art, appears with different definitions in different sciences (Turan, 2014, p. 13). Culture was defined by Tylor (1920, p. 1) as "a mixed whole that includes the belief, art, morality, law, other special talents and habits gained by a human over time in a society". Güvenç (2015, p. 12), on the other hand, defines it as "all the things that people learned through education in a society". When the definitions are analyzed, it can be stated that culture is the concrete and abstract values that societies carry from past to present. Each society transfers this experience to their future by making use of the past, evaluating their own past, and creates their vision with this awareness (Turan, 2014, p. 17). The task of transferring our cultural values and historical accumulation from the past to new generations and enriching them is seen as a very important issue in introducing ourselves to the outside world as a country. Therefore, as a society, importance should be given to investigating, developing and transferring it to future generations. In addition, the objective of learning and teaching of culture should take place as a citizenship duty in education systems and teaching programs (Oğuz, 2008, p. 1).

Cultural Heritage (CH), which is a creative expression of people's past, recent past and present assets, is the knowledge that gives information about the traditions, beliefs and achievements of a country and the people living in that country. Human CH is examined under two titles as "Tangible Cultural Heritage" (TCH) and "Intangible Cultural Heritage" (ICH). While TCH expresses concrete objects such as monuments, paintings, sculptures; ICH refers to events that can not be observed in a concrete way, such as music, dance, literature, theater, religious ceremonies, traditional activities, which are transferred from generation to generation (Ardemagni & Aslan, 2006, p. 7). CH provides new generations with opportunities for learning and development, as well as the values. By giving people meaningful emotions and valuable memories, CH develops a sense of creativity and discovery in individuals. In addition, CH should be preserved because it carries many important elements from the past that individuals should learn from them and deepen by them their perspectives on the world and life (Ünal, 2014, p. 11). CH is mentioned within the contracts, legal documents, laws and regulations etc. of international or national institutions and organizations such as UNESCO (United Nations Educational, Scientific and Cultural Organization), International Council on Monuments and Sites Turkey National Committee [ICOMOS]. TCH include structures, historical sites, monuments and all the products made by humans that are thought to be passed on to future generations (Can, 2009, p. 5).

In addition to TCH, the CH that societies transfer their experiences orally to next generations is called ICH. Because of the developments in technology, the oral CH that has been accumulated for thousands of years is in danger of disappearance and destruction. UNESCO (2003, p. 2) emphasizes that ICH must be protected for future generations. It is seen that in this definition and in the emphasis of UNESCO, ICH is an important accumulation and its protection for generations. UNESCO's "Convention for the Safeguarding of the Intangible Cultural Heritage (2003)" also expresses the ways and possibilities that will help societies protect and convey their ICH to next generations. Based on this convention, the ICH elements list of the societies are determined and the ways to safeguard ICH at national and international level are shown. Hence, countries are able to safeguard their ICH, which is in danger of disappearance, via national and international regulations and with public consciousness (Oğuz, 2009, p. 8).

ICH, includes the practices, examples, expressions, knowledge and skills makes people feel a sense of belonging to their communities. Most information that is considered traditional can also be used in systems such as health and education today (UNESCO, 2018). UNESCO attaches great importance to the protection and transfer of ICH in education as well as in every field. The concept of "transfer to next generations through in-school or out-of-school education" is mentioned within the conservation approaches of ICH in Article 2, Paragraph 3 of the Convention. In the 14th article of the Convention titled "Strengthening Education, Sensitivity and Capacity", there are sub-articles related to the inclusion of the elements of ICH into formal and non-formal education curriculums:

a) Some measures should be taken to ensure that ICH is promoted to people, respected and developed by people. These are;

• To prepare educational, sensitivity-raising and informative programs targeting the majority of society and especially young people,

• To prepare education and training programs determined within the communities,

• To organize capacity-enhancing activities mostly in the fields of administrative and academic research for the protection of ICH,

• Ensuring the transfer of information from generation to generation through out-of-school facilities,

b) People should be informed about threats to ICH and activities carried out in accordance with the Convention.
c) Training should be encouraged for the protection of natural areas and places needed for the lecturing of ICH (UNESCO, 2003, p. 6).

Education and educators have important duties in the protection and transfer of ICH. As a matter of fact, the importance of education is mentioned in the Convention. Societies' making use of their own culture while providing formal and informal education, is also beneficial in the transfer of ICH. It is possible only with this goal to raise conscious generations who know their own culture (Gürkan, 2015, p. 26). ICH is constantly reconstructed and gives a sense of identity and continuity to the communities, depending on their interaction with the environment, nature and history; thus contributes to respect for cultural diversity and human creativity. The oral traditions and transferences, along with the language that acts as a carrier in the transfer of ICH contains epics, legends, folk stories, proverbs, tales, jokes, riddles, lullabies, rhymes and idioms (See Table 1).

Table 1. *ICH Elements of Oral Traditions*

ICH Elements of Oral Traditions			
Proverb	Riddle	Legend	Humorous Short Poem
Idiom	Joke	Lullaby	Tale
Folk Story	Epic	Rhyme	

The most important factor in the protection of ICH by societies is the individuals who are the conveyors of CH. These people who transfer their experiences, their professions to future generations are defined as living human treasures. From this point of view, it is an important issue to raise children, who are the youth of today and adults of future, as individuals who value and protect the elements of ICH. Since it was directly related to the content of the research, it was deemed appropriate to present the content of "mathematics education before school" under a separate subtitle.

Mathematics Education and Teaching Numbers in Preschool

Preschool children unwittingly use their cognitive skills to get to know and understand the world. In this way, the foundations of mathematical thinking are laid in these children at a very young age. It includes cognitive improvements in which children plug in and out or place side by side the playing items. In a way, while children know the world mathematics help them (Ulutaş,

2015, p. 212). In our daily life, many activities such as saying the hours, cooking, shopping require using mathematics. Like adults, preschool children use mathematics in their daily lives unwittingly. For example, when a baby tries to put a toy into her mouth and if it does not fit she learns to find another smaller toy that can fit into her mouth. In this way she learns the concept of big and small. Preschool children in daily life learn informally like this. To help and support children discover the world, affect their future education and cognitive skills positively (Kandır & Orçan, 2010, p. 7). One of the areas that should be taught to children consciously is mathematics.

In addition to the number related basic concepts such as plurality, counting, numbers, sets, addition-subtraction, division-multiplication; mathematics includes quite a lot of concepts such as shapes, weight, volume, length. It starts with birth in parallel with a child's cognitive development and is learned by passing through various stages over time. Mathematics is a sequential and cumulative science and mathematics education is continuous by building the learning of new concepts on top of each other like a brick wall. For this reason, mathematics education should be given in all education levels with a correct planning starting from preschool education (Baran and Erdoğan, 2003, p. 33).

Preschool children learn to make comparisons, distinguish similarities and differences, organize information within categories, measure data and solve problems; thanks to the mathematics that helps them to know the environment. The development process of mathematics skills in children can be analyzed under nine titles as numbers and operations, one-to-one similarity, part-to-whole relationship, comparison-classification and separation, modelling, functions, geometry and spatial logic, measurement, data analysis and probability (Kandır & Orçan, 2010, p. 53).

The most used math concept by children in daily life is the number concept. While number is a concept as understood from its name, counting is a skill. Gellman and Gallistel (1978) stated that there are five principles that can define children's counting (See Figure 1).

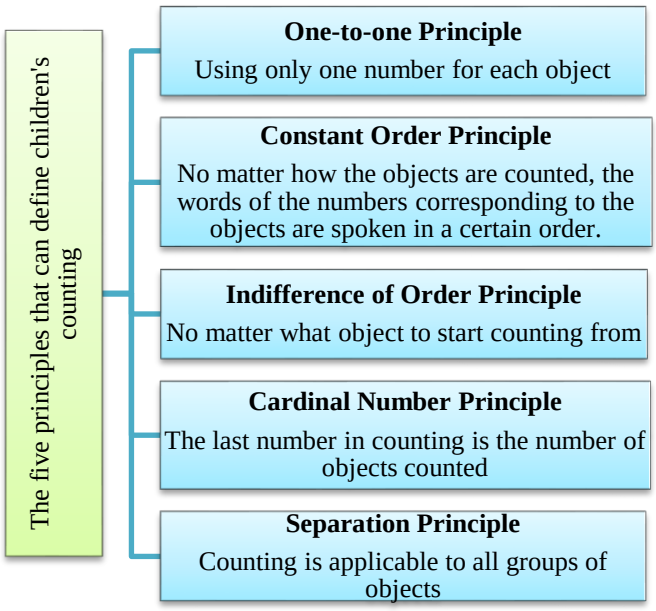

Figure 1. *The Five Principles That Can Define Children's Counting (Gellman ve Gallistel, 1978; as cited in Arnas, 2009)*

As in mathematics, the concept of number is not limited to a certain activity or lesson. The content of number concept should be dispersed across time during preschool education (Şeker, 2013, p. 17). In this way, the permanence of the education provided is ensured and likewise it is easier for children to learn mathematics.

One-to-one matching is the process of matching each object in one group with each object in another group. The number of objects in one group is usually expected equal to the number of objects in the other group. Children encounter one-to-one matching in many environments in their daily lives. For example; the presence of everyone's spoon, fork and plate on the table creates an idea about exact matching for children (Akman, 2011, p. 51). There is no limitation for the material varieties used in the activities of teaching the concept of one-to-one matching. Kandır and Orçan (2010, p. 75-75) state that in selecting material to be used for one-to-one matching, the five features as perceptual characteristics, number of items to be matched, concreteness, physical participation name and unidentical number groups should be considered. These five features are thought to facilitate the teaching of the principle of one-to-one matching.

Another important content found in the numerical development of preschool children is the whole-part relationship. First of all, the child learns that a whole has parts, and then learns that the parts form the whole. He learns that some whole things such as body, car, house and chair have

special parts, and whole things can be divided into pieces such as apples, bread, oranges (Kandır & Orçan, 2010, p. 78-79).

The comparison is to determine whether two or more objects are the same or different according to a particular feature. While children tend to do classifying based on similarities; they tend to do comparing based on differences of things. By looking at two circles of different sizes, they can usually say that one is larger than the other (Arnas, 2009, p. 43). In preschool period, children make comparisons primarily by using non-standard units. They start using the standard measuring units later. The development of children's measurement and ranking skills is closely related to their experiences (Giren, 2013, p. 65).

Classification, on the other hand, can be explained as the ability to separate and group objects according to their specific features. This skill, which forms the basis of the concepts of number and operation in children, is the comparison of the objects by taking into account their perceptual features such as size, color, and shape while classifying them (Akman, 2011, p. 55). Classification ability is the separation of objects according to their relations, that is, they create different new classes. The fact that objects have similar or different features is very important in classification (Giren, 2013, p. 64). The classification ability, combined with the ability to compare, helps children to group objects. Children who compare objects with more than one feature (such as red legos in one box, yellow legos in another box, or play dough in one box, crayons in pen holder) classify the objects according to their features and to their situation. Especially for children in the age group of 3 to 4, there may be some problems in classifying things such as inability to perceive which aspects of the objects are similar, and inability to distinguish similar objects when classifying more than one feature (Canoğlu, 2007, p. 34).

Modelling, which helps children get to know their environment, is the sequence of numbers, colors or shapes that repeat continuously. In order to understand the structure of something, information about what will come in next steps is needed, and the prediction of next steps is possible with modelling skills. Thanks to modelling, since children know the order, their self-confidence increases. Modelling is related to multiple dimensions of mathematics such as counting and geometry. Modelling requires creating or discovering arrangements related to audio, visual and motor arrangements (Kandır & Orçan, 2010, p. 90).

The first experiences of the real world, such as children being able to distinguish an object from another object, how far or near an object is, are related to geometry and spatial perception-

spatial thinking. By playing with blocks, children who make different shapes with them gain their first experiences about geometry by observing their environment and playing games (Arnas, 2009, p. 79). In terms of the development of geometric thought, two-dimensional and three-dimensional thinking and imagination are very important. Children start to notice the features of the shapes by observing the geometric shapes. In addition to recognizing shapes, it is also important to grasp the features of the shapes and the relationships between them. Geometric thoughts are part of everyday life and in this context, a connection must be established between geometry and other fields.

The way objects are expressed in numbers is called measurement. In preschool period, children learn concepts such as weight, length and volume. During this period, children use mostly non-standard measuring units when measuring. Then they use the standard measurement units in the following training periods (Ulutaş, 2015, p. 226). According to Piaget, the standard measurement units that we are used to in daily life, conservation and transfer concepts are difficult to learn for children who have not yet developed. For this reason, children use non-standard measurement units in this period (Tekneci, 2009, p. 18).

Data collection and analysis in the preschool period focuses on grouping and classifying objects according to their features, organizing and explaining the data about objects. The purpose of data collection is explained as answering the questions when the answers are not clear (NCTM 2000; as cited in Kandır & Orçan, 2010). In the preschool period, some researchers divided graphic creation into three phases: creating graphic with objects, creating graphic with pictures and creating graphic with square papers. The first stage involves creating graphics with objects, and then there is a progress towards creating graphics with pictures and then using square papers. In the first stage, it is suggested that objects that attract children's attention can be used. In addition, it is stated that getting feedback from children by asking questions at every stage of the process will positively affect students' learning experiences (Charlesworth and Lind 2013; as cited in Şeker, 2013).

Educators should act consciously and in a planned way in teaching preschool children the counting skills and other mathematics skills. Another issue of importance is the need to integrate the elements of ICH into the content of education. Considering Atatürk's statement that “Those who do not know their past cannot shape the future”, there are duties from small to large in promoting and protecting the CH for new generations and the world. Children will be the elders of tomorrow, even though they are today's youth, together they will form the adult society of the future. In line with this fact, educators and educational institutions have great responsibilities in raising children with

CH sensitivity. In mathematics education, CH refers to the ethnomathematics culture, which expresses the use of own expressions of a culture and their own values, and which is an example of transferring culture through education (Frankenstein & Powell, 1997, p. 23).

Ethnomatematics is the study of mathematical thoughts of illiterate peoples. (Frankenstein, & Powell, 1997, p. 26). The mathematics accepted in this educational proposal is the diversity developed by students and accepted / developed / designed by teacher. In the classroom dialogue, students can learn academic ethnomatics from teacher, and teacher can teach students “words” from ethnomatematics. This dialogue process is not divided into two between education and research, or between teacher and researcher. The educator is also a researcher who investigates the development of ethnomatematics with students. Therefore, research affects educational practices.

When the related literature was reviewed, it was seen that a total of 14 master's theses and two doctoral dissertations related to ICH had been made. It was determined that three of these theses were related to education and the others were in different fields such as tourism and folklore. Among these very few studies in the field of education, any research related to preschool education could not be found and this study is the first research to examine the ICH in the context of preschool mathematics education and to develop activities for teaching the number concept. In addition, it is thought that the created activities will guide teachers in terms of using the ICH in the teaching of number concept in preschool mathematics. From this perspective, considering the concept of ethnomathematics, the purpose of this study is to create and apply sample classroom activities on the use of ICH in the teaching of number concept for 48-66 month-old children and to share the application results. Our motivation emerged from the idea of helping the development of cultural personalities of preschool children. The problem statement of the research is determined as "How can the Intangible Cultural Heritage Elements be used in Teaching 48-66 Months to Children the Number Concept?"

METHOD

In this study, which aims to use the items of ICH in teaching the concept of number for 48-66 months old children, the case study design, one of the qualitative research patterns, was used. Yin (1984) defines the case study as a research method that examines a current case in its own life, and where the boundaries between the case and the content in it are not specified precisely and multiple sources of evidence-data are obtained. The aim in this method is to find answers to the questions of

"How?" and "Why?" and allows an in-depth examination of the event (Yıldırım and Şimşek, 2000, p. 73). Therefore the case study method was chosen as the design of the research because it provides explanatory information to researcher. Considering that the elements of ICH are in danger of extinction, it has been seen that it is necessary to prevent this and introduce CH to new generations. For this reason, in order to examine this situation in depth and to further improve this situation, the case study method was used in this study, which was conducted to use CH in teaching children the concept of number.

Research Group

The research group was selected using the appropriate sampling method of the non-random sampling methods. Five girls and ten boys a total of 15 (fifteen) students aged 48-66 months, who were receiving preschool education in the preschool of a public primary school affiliated to the Ministry of National Education (MEB) in Kocaeli province, were selected.

Data Collection

In the research, Mathematical Concept Skills Control List developed by Irkörücü was used to measure the number concept skills of children before and after the application (Irkörücü, 2006). Mathematical concept skills measurement test applied to students are handled under eight titles as number skills, operation skills, shape skills, spatial skills, opposite concepts, measurement skills, graphic skills and time concept skills. Materials (Number cards, Dotted cards, Picture cards and Cubes 1 to 10) for measuring items under each title have been created. Since the purpose of the research is teaching the concept of number, the number skills section of the concept scale was used in this study (İrkörücü, 2006). Before the application, activity plans were prepared by the researcher separately for each number in accordance with teaching the number concept for 48-66 months old children. For example, in the activity of the number one, Mevlana's story “One Poet Two Viziers” was used in the Turkish language activity. By the common idea of two experts in the fields of mathematics and preschool education, the amount of money spent in the story has been reduced in accordance with the level that children can understand and the story has been arranged in this way. In order to support the activity plan in the daily education flow, the worksheets of the number one were used in the drama activity in the story animated literacy preparation activity. These plans were evaluated by two experts, one being a mathematics teacher and the other being a preschool teacher. During the research, the books containing ICH items were examined in terms of utilizing them in preschool mathematics education and in terms of suitability for use in number teaching in

particular. The list of books given in Appendix 1 were examined with document analysis method, and in all the 39 books examined, the findings about CH contents which include numbers are given in Table 2.

Table 2. *The 39 Books Examined and Findings Obtained*

The Category belonged in ICH	**Number of Books Examined**	**Preschool Level Cultural Elements which Include Numbers**
Proverb	1	14 Proverbs
Idiom	7	21 Idioms
Tale	3	5 Tales
Epic - Legend	5	-
Folk Story	8	9 Folk Stories
Joke	5	8 Jokes
Riddle - Rhyme	4	55 Riddles -39 Rhymes
Humorous Short Poem(Manis) - Lullaby	6	69 Manis -150 Lullaby

The findings obtained as a result of the document analysis were examined together with the mathematics education expert and the preschool education expert, and the elements to be used in the activity plans were determined. Although some elements contain numbers, they were not used because they contain information above the cognitive levels of preschool children. Due to the fact that there are more than one element containing the same number, selection was made among them and one or two were used in each lesson plan. Also, as a result of the document analysis, it was not possible to reach an epic or a legend suitable for teaching the concept of number to preschool children. In the category of folk stories, only the story of Mevlana named “One Poet Two Viziers” and “Three Fish” (two stories in total) was used within the scope of the research. While preparing the event plans, care was taken to utilize more than one element of ICH.

In addition, the number that should be given that day was used in all of the activities which were implemented in order to have concept integrity in the daily education flows formed by combining the activity plans in the preschool period. Attention was paid to ensure that the humorous poems and lullabies used in the activity plans were also suitable for the levels of the children and that they could attract the attention of the children and appropriate contents were selected. While preparing the activity plans, among the gains and indicators given in Appendix 2 of the Preschool Education Program, the cognitive gains and the concept of number were referenced to be in line with the purpose of the study.

When the number / counting concepts (MEB, 2013) that should be included in the preschool education program are examined; it was determined that the numbers between 1-20, zero, first-middle-last, previous-post and rank numbers (first, second…) are included. We tried to get the children gain the ability of "counts the items" which is stated under the heading of "cognitive acquisitions" in the Preschool Education Program. For this reason, the study is limited to the numbers from 1 to 10 in the acquisition. This research was limited to numbers from 1 to 10. Activity plans prepared for teaching number concept from 1 to 10 using ICH elements were applied through in-class activities for 10 weeks. Before the application, "Mathematical Concept Skills Control List" was applied to the children as a pre-test in order to measure the number concept skills of children. While applying this test, each student took it individually. The data obtained were recorded. After the pre-test, activity plans prepared for each number teaching were applied using the elements of ICH for 10 weeks, once a week. The application was applied to all students at the same time in the classroom environment and the process was recorded to avoid any data loss. During the application, attention was paid to the participation of all students in the activities. After the activity plan applied, questions were asked about the previous activities the following week, and the rhyme-lullaby and humorous short poem mentioned in the previous lesson were repeated to the students. After completing the 10-week program, the "Mathematical Concept Skills Control List" was applied to the children individually and the development of the number concept skills of the students was examined by comparing the obtained data. In the application control list, children were taken one by one and individual application was made. The materials required by each item were also used in practice.

Data Analysis

The data obtained during the application of the activity plans were analyzed with the content analysis method in accordance with the qualitative research method. Content analysis is the process of gathering similar data around certain concepts and themes and organizing them in an understandable way. In the content analysis, data are coded respectively, themes are found, codes and themes are arranged, and the findings are defined and interpreted (Akbulut, Ataizi, Balaban, Doğanay, Sarı, & Şimşek, 2012, p. 186-187). In order to determine whether the items of ICH given in the activity plans were learned by the children, the concepts given in the activity evaluations were asked to the children during the day. After 10 weeks of application, the elements of ICH given to the children were listed and the children were asked to define these elements and to give examples. According to the data obtained, it was determined how many of the children knew about

the elements of ICH. The number skills section of the Mathematical Concept Skills Control List (Irkörücü, 2006) was analyzed by two researchers by coding “right” or “wrong” for the students' answers (Uzun, 2013, p. 39). The items in the mathematical concept skills measurement test are of the dichotomous scale type and their answers are coded as "right" or "wrong" (Uzun, 2013, p. 41). No-consensus items were discussed and consensus was achieved. As a result of the analysis, the findings reached for the number skills control list and the elements of the ICH are given in the following section.

RESULTS

The findings of this study, which examines the effect of using ICH elements in preschool (48-66 months) education on children's learning the number concept with an exemplary application, constitutes the pre-test and post-test results of the Mathematical Concept Control Test. The findings obtained from the Mathematical Concept Skills Control List applied before and after the application to the children and the findings obtained from each student’s acquisition of the ICH items in the application process are given in this section. Number skills section of the Mathematical Concept Skills Control List applied in the research (İrkörücü, 2006) pre-test and post-test results are shown in Table 3.

Table 3. *Mathematical Concept Skills Control List Pre-test and Post-test Results*

Skills	Pre-test Results	Post-test Results
Among mixed ordered numbers from 1 to 10, finding the identical of the number drawn as a model	10 children	14 children
Match 1- to 10-dot cards with numbers from 1 to 10	4 children	14 children
Matching object cards from 1 to 10 with same numbered dot card	1 child	14 children
Telling how many objects are in the given card	6 children	All children
Counting cubes as much as the sample number given from 1-10.	3 children	All children
Expressing the order of an object (up to 10)	1 child	All children

As a result of the pre-test and post-test application, it was seen that students' skills of recognizing numbers, one-to-one matching, counting objects and rhythmic counting showed positive development. It was seen that all of the children gained the ability to recognize the numbers from 1 to 10, to match the objects one to one with the numbers from 1 to 10, to count up to 10

rhythmically and to express the order of the objects. Based on these findings, it can be said that the application performed supports positively the number concept skills of 48-66 month-old children and can be used in number concept teaching. As a result of the pre-test, a student who could not gain the rhythmic counting skill was able to count the number of 10 rhythmically after 9 donkeys or 10 donkeys given under the activity plan. When the child wanted to count the rhythmic, he remembered the joke and counted himself. In addition, when the number three was shown to the children after the lullaby given in three numbers, it was observed that the children immediately said the lullaby. As a result of the implemented activity plans, it can be said that it has a positive effect on children learning the numbers and increasing their retention.

After the applications, the status of the children to acquire the elements of ICH was examined. The findings regarding the behaviors of the ICH elements that the children are targeted to acquire and the status of each student are given in Table 4 below.

Table 4. *Acquisition Status of ICH Elements Used in Number Teaching by Children*

Target Skills to Gain	**Number of Children (Children*)**
Recognizing Turkish elders such as Nasrettin Hodja and Mevlana	11 children (C1, C3, C4, C5, C6, C7, C8, C9, C10, C12, C13)
Knowing what proverb means Giving an example of proverb	10 children (C3, C4, C5, C6, C7, C8, C9, C10, C12, C13)
Knowing what idiom means Giving an example of idiom	10 children (C3, C4, C5, C6, C7, C8, C9, C10, C12, C13)
Giving an example of rhymes about numbers	All children
Defining lullaby Giving an example of lullaby	All children
Defining humorous short poem Giving an example of humorous short poem	———
Defining joke Giving an example of joke	12 children (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C12, C13)
Knowing riddles about numbers Giving an example of riddle about numbers	All children

* Code is used to identify children.

When Table 4 is examined, it was determined that the majority of children gained the skills of knowing, defining and giving examples of ICH elements. However, it was also observed that

children could not only learn the concept of humorous short poems among all elements and could not give examples of these poems. It was determined that the children used the majority of the examples used in application while giving examples of rhymes, proverbs, idioms, jokes and riddles, but they could only say one lullaby while giving examples of lullabies. Consequently, it can be said that jokes, proverbs, idioms, lullabies, rhymes and riddles were acquired and remembered by children, but humorous poems were not understood and thus forgotten quickly.

As a result of the application, it was observed that children generally did not have any previous knowledge about famous Turkish elders such as Nasrettin Hodja and Mevlana. In the application, the activities about Nasrettin Hodja and Mevlana were tried to be embodied in the classroom with the drama method. Particularly the children who found the jokes of Nasrettin Hodja very interesting, gave examples from the Nasrettin Hodja jokes while playing with friends or while communicating even long time passed after the application. After Nasrettin Hodja's joke of "9 donkeys or 10 donkeys?" was taught in the classroom, the teacher asked one of the students (C3) "How many students were in the class?". C3 counted his friends and said 11. C5 said, "No teacher, there are 12 people in the class, C3 forgot to count himself like Nasrettin Hodja." When the teacher counted the class, he saw that there were 12 people in the class. In this class, students started to use the information they learned in daily life. Despite the fact that the children learned the jokes of Nasrettin Hodja, they had difficulties in learning "The 7 Advices of Mevlana". The stories in Mevlana's book called Mesnevi have attracted the attention of children and have been very useful not only in terms of "number concept", but also in terms of the concept of "big, small, and medium". Proverbs and idioms were combined with pictures and given to children to ensure that they stay interesting and permanent for children. In addition, when the children were asked to give examples of proverbs and idioms, they were able to tell the proverbs and idioms they had previously learned.

While a story was being read in the Turkish language activity, the phrase "to look for with four eyes (to look forward to)" in the story was asked to the children and the children could tell the meaning of the idiom. Children were able to describe the pictures shown while teaching the idioms / proverbs. In the teaching of riddles, children had difficulty in finding the correct answer of the riddles. For this reason, children were given small clues. There were no difficulties in teaching rhymes since they were the activities that children loved most. After learning the rhyme "I saw three camels", they used this rhyme in all the conversations held in the classroom. Later, the rhymes related with the number nine and the number seven were the rhymes that children used in their

games in their free time. The children also liked the rhymes about the number six and the number ten. In addition, it was observed that children had difficulty in repeating the first planned rhyme about the number ten, so they were given a different rhyme about the number ten. Even so, after a couple of weeks, it was seen that some of the children were saying to their friends the rhyme about the number ten in their free time activities. Although there is no difficulty in teaching lullabies and short poems to children, the permanence of lullabies and short poems was less than the rhymes. Particularly, the lullaby given for the number three was loved by the children very much in terms of content and it was observed that they used this lullaby in their games.

DISCUSSION AND CONCLUSION

With this study, which aims to present a sample application on the use of ICH elements for teaching the number concept in preschool, it was concluded that ICH elements can be used in teaching mathematics for preschool children.

In this study, when the pretest-posttest comparison of the Mathematical Concept Skills Control List was made, it was seen that there was progress towards the number concept in each student. It was seen that the majority of students gained the number concept skills included in the control list, and even if the other students did not acquire all of the number concept skills, they showed improvement compared to their first level. As a result of the application, it was observed that it was easier for children to remember the numbers they learned thanks to the ICH elements. For example; when the children were asked to show or write the number nine, it was observed that they remembered the number by telling the number nine rhyme. In addition, when they were asked to rhythmic count from 1 to 10, it was seen that they were doing rhythmic counting by telling the number ten rhyme. It was observed that the ICH elements affected positively the ability of children to recognize, count and remember the numbers from 1 to 10. In addition, it was observed that children acquired the skills of matching numbers from 1 to 10 with the same number of objects, and matching the same number of dotted cards with the same number of objects from 1 to 10. In line with these results, it was seen that the ICH elements can be used in teaching the number concept.

In accordance with the purpose of the research, all of the children got to know Nasrettin Hodja and Mevlana and learned riddles and rhymes. The majority of children were able to define and exemplify the concepts of proverb, idiom and joke; by using the proverbs and idioms they learned in daily life, they were able to notice. Although all the children learned the concept of

lullabies, only one lullaby sample could be presented. It was observed that the children forgot the other lullabies in the research content. In addition, not all children were able to exemplify the concept of humorous short poem. In the application, it was observed that the desired goal could not be achieved in the concept of humorous short poem, which is one of the CH. The preschool children participated in the activities from the beginning to the end of the application and had a lot of fun. During application, every week, more than one CH are included in the plan, and the researcher managed to given the children a sense of national culture besides the number concept. After each session of the application, the children talked about the jokes, idioms and proverbs they learned while playing games or talking with friends in the classroom. Consequently, it was seen that ICH can be used in preschool education and that children can learn their culture starting from preschool. It was also seen that the majority of CH elements can be used in preschool education. It is thought that there are CH elements that can be used not only in the concept of numbers, but also in the education of values, love of homeland, big-small and little-more.

In this research, all CH elements were examined and only those intended for teaching number concept were used for the purpose of the research. In addition, when the related literature is reviewed, it is seen that the applications and resources on the implementation of CH elements for preschool children are quite insufficient. It was observed that different activities prepared with the use of more than one item of ICH had a similar effect with the study of Taşkın (2012). The fact that ICH elements are quite diverse and high offers educators multiple teaching environments. It is thought that the use of these items of ICH, which helps both the recognition of CH and teaching, in teachers' teaching plans will increase the effectiveness of the education provided. As Pehlivan (2015) emphasized in his work, there are not enough studies and practices in creating cultural awareness for new generations. Children grow up unconsciously, unaware of their culture. Education has an important place in the formation of cultural self in children. For this reason, cultural heritage should be included more in education programs, textbooks and plans, and awareness of preserving culture should be given to children.

From this perspective, apart from this research, activities involving different ICH items can be developed and used for teaching other skills in mathematics education. Likewise, similar lesson plans including ICH elements can be prepared and applied for other fields besides mathematics education. Researchers are recommended to conduct experimental studies in which similar activities involving ICH elements are used and the effect of their use is tested.

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Appendix 1. *The Books Examined At Activity Planning Stage*

The Category belonged in ICH	Book Name	Author
Proverb	Atasözleri ve Hikayeleri	Selcen Yüksel Avras
Idiom	Deyimler ve Öyküleri 1-2-3-4-5-6-7 (7 Kitap)	Selim Gündüzalp
Tale	Keloğlan'ın Hiç İşidilmemiş Masalları	S. Metin Yetkili
	Masallar ve Eğitimsel işlevleri	Muhsine Helimoğlu Yavuz
	Horosandan Masallar ve Halk Hikayeleri	Sultan Tulu
Epic – Legend	Anadolu Efsaneleri	Halikarnas Balıkçısı
	Efsanelerimiz	Cavit Kavcar Mehmet Yardımcı
	Üç Anadolu Efsanesi	Yaşar Kemal
	101 Anadolu Efsanesi	Saim Sakaoğlu
	Karşılaştırmalı Türk Destanları	M. Necati Sepetçioğlu
Folk Story	Yaşayan Türk Halk Hikayelerinden Seçmeler	Ahmet Edip Uysal
	Dede Korkut Hikayeleri	Ekrem Bektaş
	Dede Korkut Kitabı	Muharrem Ergin
	Dedem Korkut'un Kitabı	M. Necati Sepetçioğlu
Folk Story	Aşıklardan Halk Hikayeleri	Timur Yılmaz
	Mesnevi'de Geçen Hikayeler	Ahmet Kasım Fidan
	Ömer Seyfettin Seçme Hikayeleri	100 Temel Eser
	Horosandan Masallar ve Halk Hikayeleri	Sultan Tulu
Joke	Fıkralarla Nasrettin Hoca	Ahmet Cansız
	Nasrettin Hoca-	Ahmet Halit Yaşaroğlu
	Bütün Yönleriyle Nasrettin Hoca	Erdoğan Tokmakçıoğlu
	Nasrettin Hoca Fıkraları	M. Sabri Koz
	Resimli Nasrettin Hoca Fıkraları	Boloyır Yayınevi
Riddle - Rhyme	Türk Halk Bilmeceleri	Naki Tezel
	Portakalı Soydum Baş Ucuma Koydum	M. Kadri Sümer
	Bilmece, Tekerleme, Parmak Oyunu ve Şiirler	Ayşe Turla
	Tekerleme, Bilmece ve Parmak Oyunlarıyla Eğlenerek Öğreniyorum	Fatma Kavşut
Humorous Short Poem - Lullaby	Çanakkale Halk Kültürü (Nazım)	Ömer Gözükızıl
	Her Güne Bir Ninni Türk Halk Ninnileri	M. Sabri Koz
	Ninni Bebeğim Ninni Ninni Şiirleri Anatolojisi	Mustafa Ruhi Şirin
	Akhisar Türkü, Mani ve Ninnileri	Kemal Çetin
	Türk Ninnilerinde islami Motifler	Ayşe Eroğlu
	İşlevsel Yönleriyle Ninniler	Suat Ungan

Appendix 2. *Preschool Education Program's Cognitive Development Gains and Indicators That are Used in the Research (MEB, 2013)*

Cognitive Development Gains and Indicators		
Gain 4: Counts objects.	**Indicators**	Counts rhythmically one by one forward / backward. Indicates the number of objects specified. Tells how many objects he/she counted. Tells the order number. Tells the number that precedes other number within the numbers from 1 to 10. Tells the number that follows other number within the numbers from 1 to 10.
Gain 5: Observes objects / entities.		Tells the amount of object / entity.
Gain 6: Matches objects or entities according to theis features.		Distinguishes and matches objects / entities according to their quantity.
Gain 7: Groups objects or entities according to their features.		Groups objects / entities according to their amount.
Gain 8: Compares the features of objects or entities.		Distinguishes and compares the amount of objects / entities.
Gain 9: Sorts objects or entities according to their features.		Sorts the object / entities according to their quantity.