

Object based museum application: You have a message from the past!

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ABSTRACT

One of the most popular places for out-of-school education is undoubtedly museums. In addition to ensuring permanent learning, the lessons, practices, and activities performed in museums provide a rich learning and fun environment, where students can see and examine first-hand evidence. Students can feel like historians or archaeologists here. Museum education provides opportunities for them to connect with and understand the past. Object based learning in museums is a useful method to understand the past and the human communities who lived in the past and to find out about them. Thus, it increases students' understanding and comprehension. This research was conducted to determine how students connected with individuals who did not exist in the past through objects using a message from the past to the future activity in the object based museum education application. The students participating in the research were asked to assume themselves an imaginary person living in the past, to choose an object, and to write the story between this object and themselves as a short message to a future person. A qualitative research method was used in this study, which was conducted with 9th grade students, and the study data were analyzed using the content analysis technique. According to the results of the research, it was concluded that the stories of the people whom the students identified with, the objects they chose, and the message they wrote may have been influenced by their perceptions about traditional male-female roles. The fact that the historical narrative is focused on political history and male heroes may have affected the differences between the messages of male and female students. The identification of participants with individuals from different cultures and societies can be seen as a positive result of object based education. It is one of the results of this research that almost half of these messages written for the future included anachronistic elements.

Keywords: Object based museum education, anachronism, history education.

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INTRODUCTION

Out-of-school learning environments can be more interesting and stimulating for students, unlike the disciplined educational environments at school. Educators attach great importance to students' out-of-school experience and the process of gaining new knowledge as a result of this experience. Regardless of the education level, museums, which are an out-of-school teaching environment, are extremely effective in gaining different knowledge and skills. They are very functional in terms of ensuring that students of all ages have an enjoyable and quality time.

Museums are the institutions that most benefit from the countries that care about modern education (Önder, Abacı and Kamaj, 2009). In many countries, they have been recognized as one of the basic educational institutions. They have been one of the learning

environments where not only students but also adults can have rich experiences. In contemporary museology, the collection, preservation, and research of collections, as well as the exhibition of them for educational purposes and helping the audience to access the museum collections, are among the most important functions of museums. Museums are classified according to the objects they have and are organized in a way that different disciplines can benefit from. Although museums were initially founded only on archeology, history, and art, it is known that today they have expanded to also include student and adult education. The museum has been defined by many different people, institutions, and countries. However, the ICOM (International Council of Museums) has defined it and its functions in a broad sense. ICOM's

definition of the museum was used from the 1970s to 2022. The Extraordinary General Assembly of ICOM approved a proposal for a new museum definition with 92.41% in Prague on August 24, 2022. Following the adoption, the new ICOM museum definition was as follows:

“A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets, and exhibits tangible and intangible heritage. Open to the public, accessible, and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection, and knowledge sharing.” (<https://icom.museum/en/resources/standards-guidelines/museum-definition/>)

With this new definition, it has been emphasized that museums promote diversity and sustainability. We see that the participation of societies is important in terms of museum activities and communication and that museums have functions, such as allowing individuals to gain knowledge, think, and have fun. There was no definition of service to the community and museum visitors in the old version, such as making people think, gain knowledge, and have experience. This definition shows that museums support a lifelong learning understanding. Developed countries, especially European countries, have given importance to museums and the use of museums as learning environments since the 19th century. The fact that Europe has a deep-rooted museum tradition and the mission undertaken by museums in countries that have adopted a contemporary understanding of education has necessitated a new definition of the museum.

In the 19th century, the Louvre Museum influenced other museums in France and Europe and they wanted to socialize by opening museums to all segments of the public, taking the Louvre as an example (Hudson, 1977). It is possible to say that museology and museum education started almost at the same time in Europe. Museums first emerged as a part of the nationalist colonial power display after the French Revolution and were seen as a fundamental part of public taste and art education (Prottas, 2019). The collections offered to the public in Europe mark the beginning of modern museology. Therefore, the origin of the museum is inherently linked to its educational goals and the belief that the public should have access to works of art (Hooper-Greenhill, 1991).

Although museum education was born as an understanding based on art education in the 19th century, it managed to focus on different subjects of education, especially during the 20th century (Prottas, 2019). Considering the development of museum education, it is seen that it has started to be considered in the cultural policies of the countries in Europe and America since the 19th century. At the beginning of the 19th century, museums and galleries were seen as educational institutions. During the First World War, when teachers were recruited and school buildings were

confiscated, museums played a major role in educating children and communicating important ideas to the general public through exhibitions (Hooper-Greenhill, 1999).

Changes in museology and the understanding of education show parallelism. There is a type of person that is desired to be raised in every era and every century. With this point of view, state policies, education policies, art, and similar areas are known to renew themselves. Considering this reality, it can be said that the understanding of museology has been shaped depending on the needs of the period and the works/contents exhibited by museums. For example, teaching using objects was the most significant feature of education in the 19th century. "Object lessons", a basic educational method applied in schools in Europe and North America, was a teaching strategy based on the idea that people could learn from an object by exploring it and its context. As a reflection of this understanding, an object based presentation was implemented in museums. Teachers visited museums with their students to examine the objects exhibited (teaching in a museum) and even borrowed objects from museums (object borrowing service) (Hooper-Greenhill, 1999). Since their establishment, museums have been protecting and presenting the objects they have and establishing a link between society and these objects. For this reason, many activities in museums are object-based.

Object based learning is at the core of museum education and includes the active integration of objects into the learning environment. Object based learning refers to the active participation of students in museum collections within a student-centered framework (Chatterjee, Hannan and Thomson, 2015). As a result of new ideas and developments in the field of education since the second half of the 20th century, educational theorists such as Comenius and J. Dewey emphasized the importance of active participation and experience in learning through the interaction of the learner with objects.

Education in the museum has the potential to enrich, support, and complement education at school. In addition to mental understanding, museum education can provide empathic bonds, curiosity, critical observation, and practical skills (Seidel and Hudson, 1999). Individuals who visit a museum have a direct connection with objects and evaluate humans and science in the context of the present and future. It is possible to achieve the goals of school and museum cooperation through museum pedagogy. Museum pedagogy aims to make museums and galleries an ideal learning environment for people of all ages, as a place that develops communication and interaction between people (Paykoç and Baykal, 2000). With the adoption of the progressive education philosophy in the curriculum, the importance of museums in education has increased and schools have begun to focus more on education in museums (Akmehmet and Ödekan, 2006). It would be correct to say that museum education has been handled with a scientific approach in this period. In particular, the efforts of the ICOM and UNESCO and their scientific

research have contributed greatly to this process.

Museum learning has generally emerged from four basic needs:

1. Getting to know one's own culture and different cultures with a versatile and tolerant approach,
2. Improving the quality of education,
3. Developing awareness about protecting the environment and cultural assets, and
4. Museums' functionality in using and employing staff trained in archeology, art history, and other fields to provide quality service (Karadeniz, 2009).

These basic needs have been a guide in determining the goals and principles of museum education. Museum education provides the effective use of museums as a multi-faceted learning and living space based on experiences during the education and lifelong learning process. Museums have various activities for their visitors according to the objects they contain. Some of these activities, which vary depending on the type of museums and their missions, can be listed as follows: "Gallery conversations, object studies, animation and drama, museum games, workshops, worksheets, touching activities, debates, and using imagination." These activities in museums allow visitors to have a good time and experience different knowledge and skills. These skills include communication, critical thinking, empathy, making comparisons, observation, problem solving, and creative thinking. Museum activities, especially when based on the object based education method, will contribute to the acquisition and development of such skills (Tezcan Akmehmet, 2008). Such activities held in museums allow students to develop some skills such as socialization, creativity, speaking and writing, focusing attention, and use and transformation of information.

Museums are not only educational areas for social sciences such as history, archeology, and art education but also learning environments for nature and natural sciences. The fact that the scope of museums and museum education is so wide has led to much research on museum education. When the research on museum education, especially in Türkiye and in the world, is examined, it is seen that the activities held in museums cover a wide range, such as the contribution of the activities to education, its effect on student success, the relationship of the museum with historical empathy, and the examples of applications that can be implemented in museums (Aktaş et al., 2023; Bolat, 2022; Cornish et al., 2021; Çınar et al., 2021; Kaba, 2021; Innes and Sharp, 2021; Egüz, 2020; Dicindio and Steinmann, 2019; Yılmaz et al., 2018; Erem, 2017; Savenijea and Bruijn, 2017; Coşkun, 2014; Taylor and Neill, 2015; Akçalı Avcı, 2015; Talboys, 2016; Falk and Dierking, 2016; Foreman Peck and Travers, 2013; Pekgözlü Karakuş, 2012; Aktekin, 2008; Ata, 2002).

Aim

One of the courses that is suitable for museum visits is

history. In Türkiye, the curriculum of this course includes excursions to museums and historical places as out-of-school applications. For this reason, this research was carried out within the scope of the "9th grade history" course with high school students from Türkiye (province of Tokat). The starting point of this research was object based museum education. It was thought that it was important for students to focus on objects that they had not noticed before in museums and to listen to and wonder about the stories of the objects. The main purpose of this research was to determine what kind of connection was established between an object and the student by focusing on that object. To achieve this aim, how students connected with what objects and their ability to combine their historical knowledge with creativity while establishing this connection were investigated.

METHOD

Research model

An object based museum education application was carried out with high school students. With this application, students participating in this research were expected to focus on different objects in the museum, discover the stories of the objects, and connect with them. At the end of the object based learning in the museum in this research, students were assigned to write a short message from the past to the future as the owner of an object they would imaginatively choose. In addition, who wrote this message from the past to the future, what kind of object the person owned, and the story of the chosen object had to be stated in the message. Thus, it was aimed to determine students' experiences of object based museum education in detail. This research, which was conducted to reveal student experiences, was designed according to the phenomenology model, which is one of the qualitative research methods. Phenomenology is used to reveal facts that we know but do not have a detailed view of, with the contribution of individuals who have experienced them (Yıldırım and Şimşek, 2016: 78; Creswell, 2016; Patton, 2014).

Study group

This study consisted of a total of 27 students, including 11 females and 16 males, from 9th grade students of high school in Türkiye. This class was chosen as the study group because the 9th grade history course is suitable for museum visits.

Data collection

The museum education started with the selection of some historical artifacts in the museum and a planned conversation with the students about these artifacts held by the researcher. Object studies were carried out with

students on a few artifacts from prehistoric times in the museum. Detailed information about the artifacts discussed in the object study was given to the students through question-answer and reasoning. Afterward, students were divided into small groups and the finds worksheet prepared by the ICOM (which allows the physical properties and other features of the find to be examined by asking questions in categories) was given to the students, and they were allowed to examine an artifact that they had determined. Thus, the object examination process in the museum was completed. Following the physical examination of the objects, students were asked to imagine a historical artifact (object) as a post-museum activity. Then, they were asked to write a short message about the features and the story of the object to the person who would find it in the future as if they were the owner of the object belonging to centuries ago. It was emphasized in the instructions prepared by the researcher for this activity that the identity of the person who wrote the message, the description of the selected object, and the connection of the object with the student, namely its story, would be mentioned. After the museum education, students were given one week to write their message.

Data analysis

The content analysis technique, one of the qualitative research methods, was used in the analysis of the data obtained from the messages written by the students from the past to the future. The data obtained were subjected to content analysis considering the distribution of the selected objects by gender, the description of the imagined objects, the subject of the stories of the objects, and the presence of anachronistic elements in stories. The content analysis brings together similar data in the form of concepts and themes and helps analyze

them in a way that the reader can understand (Yıldırım and Şimşek, 2003). For this purpose, the collected data were coded, conceptualized, and then themes were determined according to these concepts. Categories were created by the researcher to determine the level of depiction of the imagined objects. These categories were graded as “poor imagination, moderate imagination, and good imagination.” The criteria for these grades were determined as follows: 1. poor imagination: “only the name of the object was mentioned”; 2. moderate imagination: “the name, size, and material of the object were specified or the shape of the object was drawn”; 3. good imagination: “the name, size, material, and other details of the object were described.” The data obtained from students were evaluated according to these criteria.

RESULTS

The messages written by participants from the past to the future were analyzed according to the following sub-objectives: a) the type of selected objects and the distribution of object choices according to students’ gender; b) the identities of individuals who wrote the message; c) the imagery status of the selected object; d) the theme/subject of the stories about the objects; e) presence of anachronistic elements in the story.

Findings on the type of selected objects and the distribution of object choices according to students’ gender

The “objects”, the main elements of the activity of writing a message about an object imagined by students, and the distribution of the selected objects by gender were as shown in Table 1.

Table 1. Selected objects and their distribution by gender.

Theme	Female		Male		Theme
	Object	Frequency	Object	Frequency	
Jewelry/Accessories	Bracelet	1	Dagger	1	Tools of war/ Weapons
	Silver bag	1	Sword	6	
	Necklace	2	Poniard	1	
	Ring	2	Rifle	1	
	Bindalli (Traditional Turkish Dress)	1	Bow	1	
Tools of war/Weapons	Dagger	2	Clay tablet	1	
Other	Coin	1	Crown	1	Other
	Clay tablet	1	Oil lamp	1	
			Sculpture	3	

As seen in Table 1, female students chose eight different objects, namely "bracelets, silver bags, daggers, clay tablets, necklaces, chests, coins, and rings." They

mostly choose jewelry/accessory items (necklaces, rings, bracelets, bindalli, and bags). Male students chose nine different objects, namely “daggers, sculptures,

poniards, oil lamps, swords, clay tablets, crowns, rifles, and bows." It was determined that most of the male students chose tools of war (daggers, poniards, rifles, bows, and swords). The common objects chosen by both male and female students were "daggers and clay tablets." Thus, students chose a total of 15 different objects.

Findings about the identity of the person who wrote the message

In the instructions of the message from the past to the future, students were asked to write the identity of the person who wrote the message and his/her connection with the object (its story). In this context, first, the identities in the messages were determined. No identity was specified in two of the 27 messages created. However, it was determined that one of them was female and the other was male. The distribution of the identities chosen by male and female students participating in the research is shown in Table 2.

As seen in Table 2, the identities of 10 messages belonging to female students were clear. The identities of the characters chosen by female students were "Sultan Süleyman; Fatih Sultan Mehmet; Mahperi, the Daughter of the Kadi of Tokat City; Tutalya, a Hittite woman; Princess Diana of Rome; Hüma, the daughter of the Janissary Landlord; Sultan Orhan Bey; slave Arinna;

Aristaeus, a Roman Noble; a concubine in the Roman Empire." Four of the characters/persons chosen by female students were male (Sultan Süleyman, Fatih Sultan Mehmet, Sultan Orhan Bey, and Roman Noble Aristaeus). The majority of the people that female students chose were powerful, wealthy, or high-status people. When the distribution of persons created by male students was examined, it was seen that the identity of one of them was not clear in the message. Only the person who wrote the message was found to be Turkish. The identities chosen by male students were as follows: "a Roman fisherman; Leonidas, King of Sparta; Acun Kut, Bilge Kaan's Chief Horseman; Captain Bögü Alp, Kürşad's Alp; Abdullah, a janissary soldier; an epic Ottoman soldier; Hattusili II, the Hittite King; Sultan Mehmet II; a president; Tugujeko, son of Sheikh Shamil's Regent; a Turkish warrior, an Ottoman Sultan; A blacksmith from Ottoman time; Farnekes, son of the Pontus King; Arslan Bey, an Egyptian Guard." All of the characters chosen by male students were male, and all of the characters were strong and important people, except for the Roman fisherman, a blacksmith from Ottoman time, and an unknown character. Some were sultans/rulers, and others were epic soldiers and warrior heroes. It is noteworthy that both female students and male students were successful in naming the people they chose according to their identities. They had searched and found a name for the person appropriate for his/her nation.

Table 2. The distribution of the persons who wrote the messages and their gender.

Female	Identities created	Male	Identities created
F1	Sultan Suleiman	M1	A Roman fisherman
F2	Fatih Sultan Mehmet	M2	Leonidas, King of Sparta
F3	Mahperi, daughter of the Qadi of Tokat City	M3	Acun Kut, Bilge Kaan's chief horseman
F4	Tutalya, A Hittite woman	M4	Captain Bögü Alp, Kürşad's Alp
F5	Princess Diana of Rome	M5	Abdullah, a janissary soldier
F6	Hüma, daughter of the Janissary Landlord	M6	An epic Ottoman soldier
F7	Sultan Orhan Bey	M7	Hattusili II, the Hittite King
F8	Slave Arinna	M8	Sultan Menmet II
F9	Unknown (female)	M9	A president
F10	Aristaeus, a Roman Noble	M10	Tugujeko, son of Sheikh Shamil's Regent
F11	A concubine in the Roman Empire	M11	A Turkish warrior
		M12	Unknown (Turkish)
		M13	An Ottoman Sultan
		M14	A blacksmith from ottoman time
		M15	Farnekes, son of the Pontus King
		M16	Arslan Bey, an Egyptian guard

Findings about students' imagination of the selected object

During the museum excursion, an object study was carried out about the artifacts there. After the excursion, students were asked to choose an object imaginatively and describe it and its connection with them. After they had chosen the objects, the extent of students' imagination of these objects was determined. The

imagination level was categorized as "poor imagination, moderate imagination, and good imagination." The criteria for these categories were determined as follows: 1. poor imagination: "only the name of the object was mentioned"; 2. moderate imagination: "the name, size, and material of the object were specified or the shape of the object was drawn"; 3. good imagination: "the name, size, material, and other details of the object were described." The data obtained from students were

evaluated according to these criteria. According to these criteria, it was found that 14 students had poor imagination, eight had moderate imagination, and five had good imagination. The results obtained were as follows:

1. Poor imagination: It was determined that 14 of the 27 students in the study could not imagine the object they had chosen. They wrote only the names of the objects they had chosen. For example:

F4: Bracelet
F11: Gold ring
M1: Sculpture
M4: Bow
M13: Dagger

2. Moderate imagination: Eight students in the study had a moderate level of imagination about the object they had chosen. For example:

F1: Emerald inlaid dagger
F3: Bindalli embroidered with yellow thread on purple silk fabric
F6: Shiny dagger decorated with precious stones
M3: Silver inlaid sword
M2: Large Bronze Ares Statue

3. Good imagination: Five students participating in the study had a good level of imagination about the object they had chosen. For example:

F2: An eagle-headed silver ring with red zircon stone and eagle's claw

F9: A bronze necklace with black beads and a long chain
M8: A heavy and very sharp sword made of gold
M6: A comfortable, light, and steel sword with an eagle-headed grip

In light of the findings, it was seen that students' imaginations about the objects they had chosen imaginatively were not strong. Half of the students participating in the research had poor imagination. They could only mention the names of the objects they had chosen. The number of students having a moderate level of imagination was eight. At this level, the name of the object, the material it was made of, and its size were specified by students. Only five of the students in the study had good imagination. The name of the object, the material it was made of, its size, and other details had been described. It was determined that fewer students had this level of imagination.

Findings about the theme/subject of the stories related to the objects

Students participating in the research were asked to imagine an object and write the story of its connection with them. The stories of male and female students were analyzed separately, and the findings were tabulated as in Table 3 in light of the data obtained.

Table 3. Distribution of the subject of the stories in the messages by gender.

Female	Identities created	Male	Identities created
F1	Assassination	M1	Drought
F2	Gifts sent by kings after conquests	M2	Characteristics of the Spartans
F3	Star-crossed lovers	M3	Warrior memories in ancient Turks
F4	Family fleeing war	M4	Warrior memories in ancient Turks
F5	Escape from invasion	M5	Warrior memories of a janissary
F6	Love story	M6	Warrior memories of a janissary
F7	The issue of the first Ottoman money	M7	Unclear
F8	Love story	M8	Memories of war
F9	Unclear	M9	The reason for the development of war technology
F10	Love story	M10	Memories of war
F11	Love story	M11	Memories of war
		M12	Turkish tradition
		M13	War and leadership memories of the Sultan
		M14	A soldier becomes a martyr
		M15	Battle of Zela
		M16	The mysteries of the Egyptian country

When Table 3 was examined, it was seen that most of the stories created by female students were love stories. Five of the eleven female students had focused on love. Two students wrote about fleeing war and invasion, one about an assassination, and one about gifts sent by kings following conquests. One student could not create a story about the object he/she had chosen. Most of the female students in the research wrote a story about "love" and the objects they had chosen and the heroes

in the story were all important and powerful, which revealed the emotional and romantic tendencies of female students. The painful and destructive side of the war was handled especially in the stories about people escaping from invasions and wars by students covering subjects other than love. When the subject of the stories created by male students was examined, it was determined that 10 of them directly and one of them indirectly wrote about war and war memories. It was

observed that the story written by a student did not have a specific subject. The remaining four students focused on "drought, the characteristics of the Spartans, Turkish tradition, and the mysteries of the Egyptian country." The subjects of the stories created by male students were mainly about war and the memories of warriors. The objects chosen by most of the male students were war instruments and the heroes they imagined were warriors or statesmen, which showed that the stories they created included war and violence.

Findings about the presence of anachronism in the stories of objects

The stories created by students were about the past. They were examined to reveal whether there were chronological inconsistencies, that is, anachronistic elements, in the stories written for this purpose. It was determined that there were anachronistic elements in the stories created by a total of 11 students in the research. The anachronistic expressions found in students' stories were as follows.

F2: Fatih Sultan Mehmet: "I conquered the port of Otranto in the south of Italy in 1480."

F3: Daughter of the Qadi of Tokat City: "Date of the letter: June 30, 1915", "I received the martyrdom news of my fiancée, whom I sent to Damascus on January 14, 1915 with the 4th Army."

F6: Hüma, daughter of the Janissary Landlord: "... Fatih Sultan Mehmet, whom Bosnian Muslims see as their liberation..."

F7: Orhan Bey, the Ottoman Sultan: "Byzantium was shocked by the issue of this coin."

F9: Unidentified woman: "I made a necklace in the Bronze Age." "..... When I made the necklace, it was 3000-2000 BC."

M7: Hattusili III, the Hittite king: "I want the person who finds this crown, should be someone who defends democracy."

M8: "I am Fatih Sultan Mehmed Han, the sultan of the great Ottoman Empire, who ruled over three continents."

M9: "I was born in Malatya in 1665. I was the most important prime minister of the time. Its name was the Republic of Malatya.My engineers worked nonstop for five years. I passed away in 1735. ...The rifle I invented was developed, and machine guns, rockets, missiles, tanks, and cannons were invented."

M11: Turkish warrior: "Hellenistic period 330 BC" (the date noted below the story)

M14: "I am a blacksmith living in the Ottoman Empire in the 18th century."

M15: "I lived in the Hellenistic period states....it is 50 BC in the Zela district near Zile..... During the excavations in Zile, statues of many Greek gods were found. It is currently on display in the Tokat Archeology Museum."

When students' expressions were examined, it was seen that in some of the stories indicating a date, they had used the Gregorian calendar instead of the Islamic one and that they had used the expression BC or concepts such as the Bronze Age or the Hellenistic Period, which

were determined by modern world historiography. Other anachronistic expressions used by the students included using today's concepts (get shocked, democracy, republic, rocket, missile, and prime minister) for past events. Finally, it was observed that the individual living in the past time gave precise information about the future. For example, "I passed away in 1735" (M9). "Sculptures of many Greek gods were found during the excavations in Zile. They are currently on display in the Tokat Archeology Museum" (M15).

DISCUSSION AND CONCLUSION

The following results were obtained in this research, which was conducted with high school 9th-grade students.

Within the scope of this object study, it was concluded that participants' perceptions about the traditional male-female roles could be effective in object selection. While female students mostly chose jewelry, male students chose tools of war. This situation can be explained as follows. Society constructs the identities of men and women and puts not only women but also men into these identities (Seçgin and Kurnaz, 2015). The stronger the child receives messages from his/her environment regarding his/her gender and the connection between his/her identity and gender, the more sexist his/her choices regarding certain objects may be. On the other hand, the effect of biological factors on children's object selection is undeniable. For example, it has been observed in some studies that the male hormone causes boys to be more active, and they tend to play games, such as running, climbing, racing, and demolition more thanks to this hormone (Moir and Jessel, 2002; Fabes et al., 2003). Male students may have tended toward tools of war for this reason.

In the study, the extent of students' imagination about the objects they had chosen was determined. This was done to contribute to the development of students' creativity through object-centered museum education. According to the findings, the majority of the students had a poor imagination about the object they had chosen. Few students had a good level of imagination. It can be thought that this situation may have been due to the lack of expressive language skills in students. Alternatively, it may suggest that students' creative thinking skills were not strong enough. It is possible to develop students' creative thinking skills in object-centered museum education by making various interpretations of objects (Gartenhaus, 2000).

The examination of the information regarding the identities of the owners of the selected objects indicated that four of the female students had chosen male identity and the remaining seven had chosen female identity. Male identities chosen by female students were important statesmen/rulers in Turkish history. Other female identities included princesses, slaves, concubines, and daughters of important people. All male students had chosen a male identity. Except for one of the identities (fisherman), the remaining were either soldiers/commanders or rulers. It was observed that

most of the female students identified themselves with "powerful and high-rank" people in their messages. They became either the daughters or wives of these powerful statesmen. Females mainly identified themselves with other powerful people. They did not choose ordinary people with unique characteristics. Almost all of the male students associated themselves with a commander/soldier or ruler. These people, with whom males connected, were powerful, authoritative, respected, and influential leaders. It can be seen as a positive result of object-centered education that these people with whom students identified themselves were from different societies and different times and that they found original names for themselves. This is because objects from different societies and cultures were examined and the stories of the objects were emphasized in this object-centered museum education.

The stories about the imaginatively chosen objects were examined, and what kind of stories students created and how they connected with the object they had chosen were determined. It was observed that there was a significant difference between male and female students in terms of the subject of the stories created. Female students mainly focused on love, and almost all of the male students focused on war. Female students connected with the objects that were at the center of the stories they created through love stories, while male students did it through stories of war and heroism. According to the results of the study, it can be said that young individuals at higher education levels have traditionally adopted gender roles. Attributing this result to the effect of gender understanding alone may not be an adequate conclusion in itself. The dominance of popular culture in society is also open to discussion. The production of popular culture by taking into account the taste of the majority of society and the aim of creating a social impact at the production stage makes it easier to reach all segments of society (Baydar, 2013). This culture shows its effect through a broad range of channels, from television programs to series, from movies to cartoons, computer games, and lyrics. We see that popular culture also affects societies through gender roles. It is possible to see this effect in the songs we listen to, the TV series and movies we watch, and even in the most popular fairy tales told when we were little. Even the tales revolve around subjects where men display their heroism and women are at the center of love stories, waiting for their prince charming (Demir, 2021). From this point of view, especially students' handling of love and war in object stories can be explained by the increase in the number of productions, such as films, series, and animations that deal with historical events and people in the last decades. Unfortunately, popular TV series and movies often deal with men as warriors and heroes and women waiting for love and surviving in the shadow of others with the opportunities they provide. None of the students created science, art, or ordinary stories. They preferred whatever was popular. It is a fact that gender roles and popular culture affect research results. But one of the most important reasons for these results is the historical narrative in schools. Male rulers, soldiers, and their heroism are at the center of the

understanding of history teaching that focuses on political history. The fact that women and women's movements in the past were not emphasized enough in history education in Türkiye may have been effective in reaching these results.

Anachronistic elements were identified in the stories written by nearly half of the students participating in the research. Ayverdi and Topaloğlu (2007) defined anachronism as "mistaking the date and age of an event and confusing history and eras." Anachronism, which is commonly called historical inconsistency, appears in historiography. It can be said that anachronism takes three different forms: factual anachronism, linguistic anachronism, and approach anachronism (Öztürk, 2011). Factual anachronism is to consider a fact as if it existed in a historical period. This kind of mistake is caused by a lack of knowledge or carelessness. Linguistic anachronism is the historian's use of contemporary concepts to understand and describe phenomena of the past. Attitudinal anachronism, on the other hand, is the historian's use of current perspectives and approaches to explain the past (Kurbanoğlu, 2021). It was stated that almost half of the stories that students constructed about objects they had chosen involved some anachronistic elements. When the stories were examined, factual anachronism was encountered the most. In this type of anachronism, students misused time, calendar, and some concepts (BC, Bronze Age, Hellenistic Period, etc.). Based on the findings, it was determined that linguistic anachronism included the use of non-historical concepts and facts. Students were found to use today's concepts in their stories of the past (to be shocked, democracy, etc.). It can be thought that these mistakes, which students made, were related to their lack of knowledge or carelessness.

With the results obtained, it can be recommended to apply object based museum activities to primary and secondary school groups. Differences can be discovered between the openings in the functioning of object studies in different themes.

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