

Self-Sufficiency Beliefs of Class Teacher Candidates on Museum Education

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Abstract

The aim of the study is to determine the self-sufficiency beliefs of classroom teacher candidates regarding museum education according to the variables of gender, total level, and whether they have taken a course related to the subject of the museum before. The study was conducted with the screening method, one of the quantitative research methods. The study was carried out with teacher candidates who continue their education in the Classroom Teaching Program at a state university located in the Western Black Sea Region. The purposive sampling method was used in the selection of primary school teacher candidates who participated in the study. The implementation process of the study was carried out in the 2020-2021 academic year. The Personal Information Form that was created by the researchers and the "Self-Sufficiency Belief Scale for Museum Education" that is developed by Yeşilbursa & Uslu (2014) was used to gather data. Anova Test, Mann Whitney U Test and Kruskal Wallis Test were used to solve data. As a result of the study, the self-sufficiency beliefs of classroom teacher candidates on museum education were obtained as 'high'; It has been agreed that the gender variable did not show a significant difference in the state of belief regarding museum self-sufficiency, and variables of all level and whether or not to take courses related to museum education beforehand caused a significant difference in the process.

Keywords: Museum, museum education, self-sufficiency belief, class teacher candidates.

Sınıf Öğretmeni Adaylarının Müze Eğitime Yönelik Özyeterlik İnançları Öz

Bu çalışmada sınıf öğretmeni adaylarının müze eğitime ilişkin özyeterlik inançlarının cinsiyet, sınıf seviyesi ve daha önceden müze konusuyla ilgili ders alıp almama değişkenlerine göre belirlenmesi hedeflenmiştir. Çalışma, nicel araştırma yöntemi, tarama yöntemiyle hazırlanmıştır. Çalışma Batı Karadeniz Bölgesi'nde yer alan bir devlet üniversitesinde, Sınıf Öğretmenliği Programı'nda öğrenimlerine devam eden öğretmen adaylarıyla gerçekleştirilmiştir. Çalışmaya katılan sınıf öğretmeni adaylarının seçiminde amaçlı örnekleme yöntemi esas alınmıştır. Çalışmanın uygulama süreci 2020-2021 eğitim öğretim döneminde gerçekleştirilmiştir. Verilerin bir araya getirilmesi için araştırmacılar tarafından oluşturulan Kişisel Bilgi Formu ile Yeşilbursa ve Uslu (2014) tarafından geliştirilen 'Müze Eğitime Yönelik Özyeterlik İnanç Ölçeği' kullanılmıştır. Verilerin çözümünde Anova Testi, Mann Whitney U Testi ve Kruskal Wallis Testi kullanılmıştır. Çalışmanın sonucunda, sınıf öğretmeni adaylarının müze eğitime yönelik özyeterlik inançları 'yüksek' olarak elde edilmiş olup; cinsiyet değişkeninin müze özyeterliğine ilişkin inanç durumunda anlamlı farklılık göstermediği, sınıf seviyesi ve önceden müze eğitimi ile ilgili ders alıp almama değişkenlerinin ise süreçte anlamlı farklılığa neden olduğu anlaşılmıştır.

Anahtar kelimeler: Müze, müze eğitimi, özyeterlik inançları, sınıf öğretmeni adayları.

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INTRODUCTION

Human beings have various interests and needs as social beings from the moment of birth. So, individuals try to meet emerging individual or social needs in time. In this way, they complete their essential and emotional needs. In doing so, they both learn and teach. In this direction, humans are in a development throughout their lives. As developing personally, they take a step into life by putting their emotions at the forefront. At this point, they direct themselves to an area of their interest. In this context, each person's interests may differ. One of them is the area of creating collections with the tendency of researching, examining, collecting and exhibiting old works from past to present because ancient artifacts are the realities of the social life of humanity (Güleç & Alkış, 2003). In this reality that extends from past to present, a human is not only a being who listens and make do with what they listen but also a person who research, question, criticize and interpret (Janes, 2010; Yücel Kurnaz, 2015). Over time, people have tended to use the ancient artifacts for demonstration purposes. Due to this use, they opened the ancient pieces to their close circle through exhibition. The concept of the display has been used for the purpose of hiding and showing off from past to present. These aims have replaced their places with the concept of a 'museum' over time.

A classroom teacher is a person who influences the mental development of people, helps future generations to be researchers and creators in addition to impacting their attitudes and behaviors; a candidate classroom teacher is a student who continues education for these purposes (Aptekin Yolcu, 2018). Classroom teacher candidates, who have an important impact on future generations, need to be knowledgeable about museum education and have a belief in self-efficacy. As for museums, they are places where cultural artifacts are learned (Cengiz, 2006; Lee et al., 2021). Museums are important places for humankind. Because they are the places where information about the past is retrieved. Museum education, on the other hand, is the state in which learning about museums is carried out with a combination of formal and non-formal education (Şahan, 2005). This training should be taken into consideration as it involves teachers and candidate teachers. A teacher is supposed to be able to attract students' attention and raise their awareness about this issue. He/she should be able to arouse excitement and enthusiasm in students. The teachers who possess self-efficacy can support students. Self-efficacy is the awareness of what a person is capable and incapable of doing (Acar, 2007). Candidate teachers' self-efficacy in the subject of museum education can contribute to education.

Museums are places where many artifacts in history are stored, preserved, exhibited and used for information purposes. Many different definitions of "museum" have been made. The definition of a museum by the International Council of Museums (ICOM) is as follows: Institutions that work for the public benefit by collecting artistic, scientific, health and technological works together, which are tasked with preserving cultural artifacts and aiming to prioritize the education, school and taste of these pieces, are called museums (URL-1, 2022). Museums have developed themselves in the society and have taken a step towards becoming an institution that is particularly interested with education and training life of children (Önder, Abacı, & Kamaraj, 2009). According to Özçelik Tezel (2007), museums are important institutions where past experiences are learned with evidence and historical life forms of nations are learned. They are places where artistic and scientific objects, remains and pieces are preserved and stored in order to open and show them to the public (Kocaoluk & Kocaoluk, 1982; MEB, 2015; TDK, 2021).

Museums have been used in different meanings since the day they were founded. In Ancient Greek Mythology, the word 'Mouseion' in Greek and 'Museum' in Latin in the sense of House of Mousas and then Temple of Sciences have been used, and have been translated into all world languages (Real, 1999; Dilli, 2014; Peker, 2014; Demir, 2015; Sölpük, 2015). The concept of a museum has shown itself in ancient times, originating from the needs of people (Kaya Koçak, 2010). Museums maintain their existence due to situations arising from people's wishes. Therefore, museums have shown their existence together with ancient people. Previously, nobles, wealthy merchants, princes, businesspersons had exhibited their personal belongings and had collected beautiful objects and pictures for show (Camgöz, 1996). In fact, only certain sections of a museum were able to be visited in the first years of existence (Hooper-Greenhill, 1995). In this respect, museums have recently been opened to the public. During the Middle Ages, artifacts have preserved their existence by hiding in holy places and churches and had taken place only in exhibition areas of religious artifacts (Real, 1999; Çetin, 2002; Karakaya, 2015). This order changed with Reformation and Renaissance movements. The discovery of Americans and the antique artifacts which travelers had brought has provided the formation of the museum in real terms (Ören, 1994).

The first museum in the world is the Alexandria Library which was opened in the Egyptian city of Alexandria in the 3rd century BC (Yücel, 1999, 20; cited in Ekelik, 2010; Pekgözlü Karakuş, 2012). However,

creating a museum from the collection was first done in the Ashmolen Museum in England (Yıldızturn, 2007). Other museums in the world: Uffizi Gallery; which is a museum in Italy (Şahin, 2007), the British Museum; the world's first public museum in England, the Smithsonian Institute Museum; which is a foundation museum (Keleş, 2003), the Louvre Museum; which is the first public museum in France (Kervankiran, 2014), the Metropolitan Museum in New York (Sönmez, 2011), the Hermitage Museum in Russia. Museums have also developed in Turkey. Caves in Anatolia show the existence of museology with rock paintings (Sönmez, 2011). The first step was taken in Turkey with the appearance of Osman Hamdi Bey in museology, which is carried out by foreign people in Turkey (Kervankiran, 2014). The first museum in Turkey was opened in Hagia Eirene Church in Istanbul (Kaplan, 2017). After Osman Hamdi Bey showed himself in Turkey, he established the Archeology Museum and Sanayi-i Nefise School (Keleş, 2003). Ottoman State enacted the law of Asar-ı Atike Nizamnamesi (Ancient Works Law) in 1869 in order to protect ancient monuments (Turkish Republic Ministry of Culture and Tourism, 2014). Some museums in Turkey are as follows; Ankara Ethnography Museum (Özkoç & Duman, 2008), Rahmi Koç Industry Museum in Istanbul (Çetin, 2002), Natural History Museum (Meydan & Akkuş, 2014), Sadberk Hanım Museum (Sölpük, 2015). There is not only pottery or artifacts in the museums. Written pieces have also been published. Samuel Van Quichberg's published the book 'Inscriptiones', and C.F. Neicklius published the piece named 'Museographia' (Real, 1999; Şahin, 2007).

Museums have had different purposes and duties since the day they were founded. Museums aim to transfer cultures that humanity has accumulated in the past to future generations (Atınç & Karadeniz, 2011). Museums exhibit pieces by using communication tools in order to keep up with the times (Keleş, 2003). In particular, technological developments have brought changes to the aims of museums and ideas about museums. Technological developments in society also change people's lives and understanding (Şahan, 2005). Museums were initially opened for collection purposes. In the early days when museums emerged, they were seen as a direct educational environment, but this view has changed over time (Tezcan Akmehmet & Ödekan, 2006). However, now museums are also used as educational spaces for people to improve themselves (Kısa & Gazel, 2016). In this case, museums require also scientific information to be shared not only cultural facts (Andre, Durksen & Volmen, 2017) because museums are educational institutions that contribute to the development of taste and creativity feelings in individuals (Şahan, 2005). Museums that help to develop society have purposes related to science, art and social life, but they also have educational and entertainment purposes (Cengiz, 2006; Yeşilbursa & Uslu, 2014; Popielarz & Galliher, 2023). In addition, it can be said that museums also have the task of collecting, documenting, protecting, exhibiting and training (Demirci, 2009; Ekelik, 2020; Peker, 2014; Yücel Kurnaz, 2015). Museums have developed and differentiated in line with the needs of society (Çerkez, 2011). This differentiation has diversified museums. Museums are divided into types according to their collected pieces, administrative institutions, the region they serve; groups who are interested, places where they exhibit their collections and their themes (Buyurgan & Mercin, 2005).

The use of museums alongside schools for education provides quality learning for students. For this, teachers should also use museums as auxiliary education for schools (Demirci, 2009). The artifacts in museums reflect the ancient culture of existing humanity and the past. In this respect, it helps visitors to see and experience the past, to touch and smell artifacts (Bagherebadian, 2015; Umralieva et al., 2021). In addition, the approach of learning by practicing is adopted in our education system. Museums are one of suitable environments for students to cooperate and socialize in society (Kaya Koçak, 2010). For this reason, museum visits are important for students to learn based on both socialization and cooperative learning of students and teachers. Museum visits enable students to develop their feelings and communication with artifacts and the past. Museum visits need to have several features in order to achieve their purpose and be efficient. These are preparation before the museum visit, responsibility during the museum visit and general evaluation stages after the museum visit (Yücel Kurnaz, 2015). The museum gains its existence with the pieces that it exhibits, becomes a place to exhibit its pieces, and finally establishes a bond between pieces and the society that follows it (Atagök, 1999).

The fact that the Turkish education system is based on the method of learning by practicing and that the students should receive education on museums shows the need for museum education (Şar & Sağkol, 2013). The use of museums for educational purposes is very recent, that is, in the 19th century (Yeşilbursa & Uslu, 2014). Every level of museum education has started earlier in Europe and America than in Turkey (Çakır İlhan, 2016). In this case, the most developed countries see museum education as a valuable resource for both formal and non-formal education (Mercin, 2006). In addition to increasing the awareness level of students in terms of art, knowledge and museum education (Mamur, 2015), the understanding of an individual who is inclined to museum

education also develops because museums provide meaningful information in terms of expressing an individual's thinking skills and emotions (Şahan, 2005).

Museum education can be done both as a visit and in virtual ways. Since virtual museums are not tied to time and place, students at all levels can easily reach them (Sungur & Bülbül, 2019). In the current era, technology has made progress. As a result of this development, museums can be visited without going to their actual locations. Through the Internet, artifacts can be accessed virtually for people who are unable to visit museums (Sönmez, 2011). When museum education is tried to be done in museums, it may cause some problems for the teacher. A few of these problems are crowded classrooms, the indifference of museum officials, intense permission procedures for museum visits, finding a good guide, providing transportation and food, students may damage museum artifacts, etc (Çalışkan, Önal, & Yazıcı, 2016). A teacher should make a good plan for the museum visit because museum education requires a good plan and cooperation of the teacher with the museum (Yeşilbursa & Uslu, 2014). Likewise, different teaching methods and techniques, tools and materials can be used during museum education (Selanik Ay & Kurtde Fidan, 2014). The aim is to ensure that students are ready for both life and higher education (Tosun, 2015). For this reason, museum education of primary school students should be given importance (Canlı, 2016). Especially, in the first stage, museum achievements are presented with Social Studies lessons. This course is one of the courses that envisages an individual to be intertwined with society throughout his life (Şimşek, 2013). The Social Studies lesson refers to the feelings and thoughts of all the students in 1st, 2nd and 3rd grades (Köken, 2003). It is recommended to combine curricula and museum activities for a quality museum visit (Noel, 2007; Martin et al., 2016). Likewise, it is stated that cooperation with museums should be made in university education and that a program should be prepared and presented to teacher candidates (Seligmann, 2015). The presentation of museum education to teacher candidates by adapting it to course schedules helps teacher candidates gain self-efficacy in museum education. In this regard, pre-service teachers' skills in the field can be improved (Demirtaş, Cömert & Özer, 2011). By means of organizing seminars on this subject for teachers as well, the information they require for instruction at museums is provided (Aktekin, 2008). Before, during and after a museum visit, teachers should have some features in order to inform students. At the beginning of these, self-sufficiency beliefs about museum education are important. Going to a museum might be extremely hard for a teacher due to the fact that keeping an organized atmosphere with the students would not be as easy as in a classroom. However, overcoming this obstacle by making visits to museums indicates their level of knowledge about the topic (Yeşilyurt, 2013). It is utterly important to overcome teachers' deficiencies in regard to museums since it will also affect students. Teachers are of great importance to their students as they are the providers of academic knowledge (Akbaş & Çelikkaleli, 2006). A teacher who has good self-efficacy contributes to competence and personal development as well (Yıldırım & İlhan, 2010). Teacher's beliefs in self-efficacy affect his/her performance in the lesson, the methods used for the lesson and the success of the students (Tschannen-Moran & Hoy, 2001; Akbaş & Çelikkaleli, 2006).

Self-sufficiency beliefs are important for teachers to cope with potential problems and problems in their professional lives to manage their self-confidence (Yeşilyurt, 2013). In this case, the self-confidence of teacher candidates in museum education is important in their future professional lives. In order for museums to be used in lessons, classroom teacher candidates should be informed about the subject by increasing their knowledge and skills about museums (Çalışkan, Önal, & Yazıcı, 2016; Gutwill, 2018). Developing classroom teacher candidates' and teachers' self-sufficiency beliefs advance their positive view of education in museums. Along with teacher's content knowledge, there must also be a belief in self-sufficiency (Saracaloğlu, Yenice, & Özden, 2013) because self-sufficiency belief is an important concept that should be given more value in educational matters (Aşkar & Umay, 2001). Teachers with a developed self-sufficiency belief both enjoy life and are patient and understanding towards their students. Within the scope of the subject, teacher candidates who have a high self-sufficiency belief in museum education can also successfully complete their education. It is hoped that it will help to know the degree of self-efficacy of candidate primary school teachers regarding museum education and to guide the problems that may emerge. Similarly, predicting and ruling out potential issues can be accomplished by assessing whether candidate class teachers' self-efficacy beliefs differ based on gender, grade level, and whether or not they have taken a museum education course in the past. It is thought that such a study can contribute to other studies which can be conducted in the future. Self-efficacy beliefs of teachers and candidate teachers are one of the significant focal points (Yeşilyurt, 2013). In this context, the aim of the study is to reveal the self-sufficiency beliefs of classroom teacher candidates on museum education. In line with this purpose, answers to the following questions have been searched:

1. What are the self-sufficiency beliefs of classroom teacher candidates on museum education?

2. Do classroom teacher candidates' self-sufficiency beliefs on museum education differ according to gender, all level and whether they have taken courses related to museum education before?

It is thought that the study within the scope of related questions will be important in terms of revealing the self-sufficiency beliefs of teacher candidates about museums that play a role in the transfer of culture from past to present. Examining the self-sufficiency beliefs of teacher candidates in museum education is a remarkable issue in establishing the past-present-future link with its current structure, and it is aimed that the results of the study will contribute to field literature.

METHOD

Research Model

In this study, was carried quantitative research method to reveal museum self sufficiency of class teacher candidates. In research method process used survey model which is included in the quantitative research method (Sukamolson, 2007), is used in order to determine the self-sufficiency beliefs of classroom teacher candidates on museum education. Survey model includes studying a selected sample from the universe with a large number of data (Kısa & Gazel, 2016).

Study Group

This study is conducted with classroom teacher candidates who study in the 1st, 2nd, 3rd and 4th grade of a state university in the Western Black Sea Region in the 2021-2022 academic years. 100 teacher candidates, 65 females and 35 males, participated in the study. In the selection of samples, the convenience sampling method was taken as basis (Yıldırım & Şimşek, 2006). Due to the pandemic, this method was preferred in order to reach classroom teacher candidates more easily. Since participation in the study was not compulsory, the study group was limited to 100 candidate classroom teachers.

Data Collecting Tools

The data in the study is obtained with the Personal Information Form and "Self-Sufficiency Belief Scale on Museum Education" developed in line with Yeşilbursa & Uslu (2014). The Self-Sufficiency Belief Scale on Museum Education, which is used in the study, is developed in the Likert type. The scale was obtained as a 24-item scale by Yeşilbursa and Uslu (2014) through literature research and expert opinion, and a pilot study was conducted. The internal consistency of the scale was calculated, and it was concluded that it was valid and reliable. Cronbach alpha internal consistency was calculated and it was found to be .94. Items in the scale are prepared to be scored from 1 to 5 points. Permission to apply the scale and necessary permissions from the Ethics Committee are obtained from both the researchers who prepared the scale and the university where the study is conducted.

Data Analysis

Statistical analysis program is applied in the analysis of data. In the study, Anova, Mann Whitney U and Kruskal Wallis tests are used. The significance level of obtained data as a result is taken into account as $[p (< .05)]$. A normality test was performed for the distributions. According to the normality test examined that, it because was controlled that all scores weren't normally distributed at the level of .05. Therefore, in process used the nonparametric tests. According to the studies, a t-test was used to understand whether the data differed according to the specified variables. While evaluating results, standard deviation and arithmetic mean values are used. In the interpretation of data, a classification in the format of '1.00-1.79 quite low, 1.80-2.59 low, 2.60-3.39 medium, 3.40-4.19 high, 4.20-5.00 quite high. 'is taken into consideration and results are evaluated (Yeşilbursa & Uslu, 2014).

Research Ethics

Personal Information Form and Self-Sufficiency Belief Scale on Museum Education are administered online to classroom teacher candidates due to COVID-19 pandemic. Voluntary classroom teacher candidates participated in the study.

FINDINGS

In this section, obtained data as a result of the study are given. The data are given in order according to the sub-objectives of the study.

Findings and Comments on the First Sub-Aim

In this point, findings and comments about the sub-problem on "What are the Self-Sufficiency Beliefs of Classroom Teacher Candidates on Museum Education?" are given. Obtained information for the first problem is defined in Table 1.

Table 1. Total Scores of Self-Sufficiency Beliefs of Classroom Teacher Candidates on Museum Education

f	Achieved Lowest Score (Min)	Achieved Highest Total Score (Max)	\bar{X}	Ss	Mode	Median
Total	37	120	88,18	16,79	81	90,00

In Table 1, the lowest total score, the highest total score, arithmetic averages and standard deviations of total scores of self-sufficiency beliefs about museum education of classroom teacher candidates are seen. It is seen that 100 teacher candidates participated in the study. As a result, the arithmetic mean is obtained as 88.18. According to this result, classroom teacher candidates' self-sufficiency beliefs in museum education are high. The standard deviation is obtained as 16.79. This result also shows that there is no difference between the data.

Findings and Comments on the Second Sub-Aim

In this title, findings and comments are mentioned about the question of the second sub-problem which is "Do Classroom Teacher Candidates' Self-Sufficiency Beliefs Regarding Museum Education Change According to Gender? Data information is defined in Table 2 and Table 3.

Table 2. T-Test Results on Normality of Self-Sufficiency Beliefs on Museum Education of Classroom Teacher Candidates by Gender Variable

	n	\bar{X}	Ss	Sd	t	p
Gender	100	1,35	0,48	99	28,162	0,000

When looking at Table 2, it is seen that the self-sufficiency belief scores of teacher candidates are not normally distributed according to gender variables ($t_{99}=28.162$; $p<0.05$). In this case, since there is no normal distribution, the Mann-Whitney U test is applied to test the difference.

Table 3. Mann Whitney U-Test Results on the Differences in Self-Sufficiency Beliefs Regarding Museum Education of Classroom Teacher Candidates by Gender

	Gender	n	Rank Average	Rank Total	U	p
Total	Female	65	52,62	3420,00	1000	0,320
	Male	35	46,57	1630,00		
	Total	100				

In Table 3, the self-sufficiency beliefs of classroom teacher candidates on museum education didn't show a significant variation according to gender variable [$U= 1000$; $p>0.05$]. In other words, the fact that teacher candidates are male or female does not affect self-sufficiency beliefs about museum education.

Findings and Comments on the Third Sub-Aim

In this point, findings and comments are mentioned about the problem of "Do Classroom Teacher Candidates' Self-Sufficiency Beliefs on Museum Education Change According to the Class Level of Candidates?" The results are described in Tables 4 and 5.

Table 4. T-Test Results on Normality of Total Level on Self-Sufficiency Beliefs of Classroom Teacher Candidates on Museum Education

	n	\bar{X}	Ss	Sd	t	p
Total Level	100	2,57	1,112	99	23,103	0,000

When Table 4 is examined, the self-sufficiency beliefs of classroom teacher candidates did not show a normal distribution according to grade level variable ($t_{99}=23.103$; $p<0.05$). In this case, the Kruskal Wallis test is used to test the difference in grade level that is not normally distributed.

Table 5. Kruskal Wallis-Test Results on Differences of Grade Teacher Candidates' Self-Sufficiency Beliefs Regarding Museum Education According to Grade Level

	Grade Level of Teacher Candidates	n	Rank Average	p	Mann Whitney U	U/ p
Grade Total	1. grade	23	36,20	0.013	1st and 4th Grade	152/0,003
	2. grade	23	48,09			
	3. grade	28	52,48			
	4. grade	26	63,15			
	Total	100				

According to Table 5, self-sufficiency beliefs of classroom teacher candidates on museum education showed significant variability according to grade level ($p < 0.05$). In this case, studying in the 1st, 2nd, 3rd and 4th grades affects the sense of self-sufficiency in museum education. Mann Whitney U-test is used to see at which grade levels this different output is found and it is concluded that the difference is between 1st and 4th grades ($U=152$; $p < 0.01$).

Findings and Comments on the Fourth Sub-Aim

In this section, findings and comments are mentioned about the problem of “Do Grade Teacher Candidates' Self-Sufficiency Beliefs on Museum Education Differentiate According to Whether Classroom Teacher Candidates Have Taken Courses Related to Museum Education or not?” Findings related to the problem are described in Table 6.

Table 6. Mann Whitney U-Test Results on Classroom Teacher Candidates' Self-Sufficiency Beliefs on Museum Education According to Variable of Whether Teachers Have Taken a Course Related to Museum Education or Not

	Whether Teacher Have Taken Classes Before	Classroom Candidates Museum	p	Rank Mean	Rank Total	U	p
Grade Total	Yes	26	66,90	1739,50	535	0,001	
	No	74	44,74	3310,50			
	Total	100					

When Table 6 is examined, it is seen that the self-sufficiency beliefs of classroom teacher candidates on museum education show a significant change according to the variable of whether they have taken a course related to museums before [$U= 535$; $p < 0.05$]. Taking or not taking courses related to museum education affects the self-sufficiency beliefs of classroom teacher candidates. When the rank mean is examined, it is seen that the difference resulted in favor of teacher candidates who had previously received training in museum education.

DISCUSSION & CONCLUSION

In this section, the results of the study are referred. Discussions and suggestions are also included in the results.

The study was carried out to determine the self-sufficiency beliefs of classroom teacher candidates in museum education. In the study, the self-sufficiency beliefs of classroom teacher candidates on museum education resulted as 'high'. This situation is seen as a positive development in terms of museum self-sufficiency beliefs of classroom teacher candidates because classroom teacher candidates (future classroom teachers) have a positive attitude toward museums that have lighted our history. Bulut & Atilla (2017), in their study on the effect of museum education on visual arts courses in children, concluded that participants exhibited a positive attitude toward the process after museum education. Yaman, Cansüğü Koray & Altunçekiç (2004) studied the self-sufficiency beliefs of science teacher candidates. As a result of the study, it is concluded that the classroom teacher candidates studying in different high school types had similar self-sufficiency. Mamur (2015) studied museum education in visual arts classes and concluded that students' awareness increased. Yeşilbursa & Uslu (2014); Kılınç & Uygun (2015) studied self-sufficiency perceptions and self-sufficiency awareness of primary school teacher candidates in social studies courses and concluded that awareness levels of teacher candidates are high. Tural & Kala (2018) obtained high self-sufficiency beliefs of candidates who study social studies teaching. Again, Demirel

(2020) obtained the information that self-sufficiency of teacher candidates developed positively after given training in his study that is named self-sufficiency for educational practices in museums. When the literature is examined, it is seen that related studies have similar features to this study and in this direction, it is thought to support the results of the study.

In the study on the effect of classroom teacher candidates' self-sufficiency beliefs on museum education on the gender variable, no significant difference was found regarding the second sub-problem. In this context, Yeşilbursa & Uslu (2014) in their study, concluded that self-sufficiency beliefs don't differ according to gender. Peker (2014) it is found that social studies teacher candidates' attitudes toward the use of virtual museums did not change according to gender. Gürbüz (2017) examined the views of classroom teachers about pieces in the museum based on some variables and did not reach any difference regarding the gender variable. Kılınc & Uygun (2015) did not reach a different conclusion regarding gender in their metacognitive awareness study. Kısa & Gazel (2016) analyzed about the use of museums based on the items and found a difference in 2 items related to gender but did not reach a different result in 18 items. Tural & Kala (2018) did not find a significant gender difference in their study. The results of related studies support the results of this research.

The third sub-problem is whether the self-sufficiency of classroom teacher candidates changes significantly according to the total level. As a result of research, a difference is observed in the museum self-sufficiency beliefs of teacher candidates at the 1st and 4th total levels. Yeşilbursa & Uslu (2014) reached a difference between the 3rd and 4th totals in their studies. Peker (2014) didn't find a difference in his study. Tural & Kala (2018), again, did not reach a significant difference at the total level in their studies. Yaman, Cansüğü Koray & Altunçekiç (2004) reached a significant difference in their studies. Körükçü (2019) concluded that the self-sufficiency of history and social studies teachers in museum education does not differ according to total level. It is understood that related studies both improve the results of this study and include various results that contribute to field literature.

In the fourth sub-problem, a significant difference was reached regarding the variable of whether or not to take courses related to museum education. Yeşilbursa & Uslu (2014) reached a significant difference in favor of those who took museum education courses in their study on this subject. Peker (2014) found that the behaviors of teacher candidates who receive museum education and those who do not knit are close to each other. Tural & Kala (2018) did not reach a significant difference in their studies. Gürbey, Efe & Mertoğlu (2020) stated in their work with science teacher candidates that they did not know about the museum before and that they wanted to receive training on the museum from now on. In addition, studies that (Janes, 2010; Martin et al., 2016; Gutwill, 2018; Karadavut, 2021; Lee et al., 2021; Umralieva et al., 2021; Merve Karaman, 2022; Pavlou, 2022; Popielarz & Galliher, 2023; Saglamgöncü, 2023) in the field that are important for this reseach. The results of the relevant studies seem to support the results of this research.

As a result, it can be said that teacher candidates' self-sufficiency beliefs in museum education are at a proficient level. While the effect of gender variable on museum self-sufficiency belief has not been found, it is seen that the variable of total level and whether teacher candidates had taken courses related to museum education beforehand made sense in the process. According to the results, it is seen as beneficial to increase the selective or compulsory courses related to museum education in universities. It can be investigated on reasons why teacher candidates' self-sufficiency beliefs on museum education vary according to all levels; it is suggested that the study can be tried with qualitative or mixed methods by implementing different variables.

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