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PRIMARY AND PRESCHOOL TEACHER CANDIDATES' VIEWS ON MUSEUM EDUCATION

Research article

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Abstract

This qualitative study delves into the pivotal role of museums in shaping pedagogical strategies and advancing holistic learning experiences. Drawing upon rndomly selected primary and preschool education teacher candidates' perceptions, the research underscores a notable transformation in their views post-museum education exposure. Data indicates a marked elevation in cognitive capacities, aligning with previous literature, highlighting museums as dynamic spaces fostering inquiry-based cognition. Furthermore, post-exposure responses reveal an enriched understanding of diverse teaching methodologies, emphasizing museums as intersections of formal and informal education. An intriguing correlation emerged between familiarity with museums and deepened cognitive engagement, suggesting the merit of integrating regular museum visits within academic curricula. The findings reaffirm the evolving perception of museums, transcending traditional historical repositories to vibrant arenas of active learning. This study illuminates the potential of museums as instrumental tools in reshaping contemporary educational paradigms, albeit with the need for sustained educator training and collaboration between institutions.

Keywords: teachers, pedagogical strategies, 21st-century skills, alternative learning

1. Introduction

Museums have long stood as hallmarks of culture, history, and collective memory. Historically seen as tangible repositories of human civilization, their role has significantly expanded in recent decades. According to Hooper-Greenhill (1999) and Karadeniz & Okvuran (2014), museums of the 21st century have transcended their traditional exhibit-centric identities, becoming vibrant arenas for active learning and public engagement.

Especially for the young, these institutions represent an amalgamation of formal instruction and experiential education. As Falk and Dierking (2018) suggest, the museum environment fosters a unique 'free-choice' learning experience, facilitating hands-on interactions, diverse sensory engagements, and opportunities for deep introspection beyond the scope of standard classrooms. Supporting this notion, a study by McLean (1999) and Deidda & Garz (2017) found that students engaging with museum resources showcased heightened cognitive abilities, a pronounced sense of curiosity, and improved information retention.

Museums' immersive nature grants visitors, especially children, the autonomy to chart their learning journeys. They can navigate exhibits at will, bridging gaps between prior knowledge and newfound insights (Anderson, 2003). Furthermore, the diverse array of teaching strategies employed, from interactive role-play to rich storytelling, ensures an inclusive learning environment catering to varied learner profiles (Hein, 2002).

The socio-cultural benefits of museum interactions are equally pronounced. Visiting these spaces can enhance a child's cultural consciousness, empathy quotient, and capacity to perceive multiple viewpoints, as underscored by studies from Paris (2002) and DeWitt and Storksdieck (2008). In the grand scheme, these benefits not only uplift the academic framework but also serve as catalysts for societal progression and cultural enlightenment.

Consistently, the literature emphasizes the monumental role museums play in childhood education. Falk and Dierking's (2012) work asserts the cognitive benefits children accrue from museum visits, emphasizing the sparks of curiosity and critical thought processes they induce. Similarly, Puncher, Rapoport & Gaskins (2001) points out the socio-emotional growth children experience through interactive museum engagements. Aktın (2017) also emphasized similar results of act.When we delve deeper, a study by Ellenbogen, Luke, and Dierking (2004) identifies nuanced engagement patterns, positing that familiarity with museum spaces can influence cognitive engagement levels and knowledge assimilation.

The traditional classroom has long been the epicenter of education. However, educators have continuously explored ways to diversify and enhance the learning environment. One such resource that has gained prominence in educational discourse is the museum. Museums, once primarily considered repositories of art and history, have evolved into dynamic spaces that combine cultural enrichment with educational engagement. Falk and Dierking (2016) highlighted the unique 'free-choice' learning environment museums offer, which allows for personal, contextual, and socially mediated learning experiences. According to Hein (2002), museums serve as an intersection where public education meets informal learning, granting students the autonomy to explore, question, and discover at their own pace. Dewey (1938) further emphasized the importance of experiential learning, suggesting that students understand and retain knowledge better when they have lived through the experiences. Museums, with their tactile exhibits, interactive installations, and immersive environments, perfectly embody Dewey’s philosophy, offering an invaluable supplement to classroom education. In this context, it is thought that understanding how teachers benefit from the versatile potential of museums will shed light on innovative pedagogical strategies and the future of holistic education. Given these multifaceted dynamics, the present study endeavors to rigorously evaluate primary education teacher candidates' perceptions and experiences before and after museum education exposures, emphasizing the profound impact of museum interactions on child learners. This research aims to illuminate the unique value proposition of museums as vital constituents within contemporary educational frameworks, especially for young learners.

2. Method

This research adopted a qualitative method. Participants were randomly selected and their opinions aiming to gain deeper insights into their experiential reflections of museum education before and after semi-structured interviews.

2.1.Participants

Ethical Approval for this study has been obtained from the Scientific Ethics Evaluation Committee of the Faculty of Education, Selçuk University, under the official letter dated 01.07.2022, with reference number E.315993.

A total of 49 primary and preschool teacher candidates from Selçuk University and Hasan Kalyoncu University in different years, aged between 20-25 who attended the course called museum education and volunteered to participate in the study. None of the participants had received museum education before. 33 women and 3 men of them were 36 preschool teacher candidates and 8 women and 5 men of them were 13 primary school teacher candidates.

The participants were in their second, third, and last years of study, ensuring that they had foundational knowledge of pedagogical strategies and the importance of diverse learning environments.

2.2.Data Collection Tool

Opinions about the pre and post-museum education were collected from randomly selected participants using a semi-structured interview form taking approximately 10 minutes on google forms. Their responses were folowed by open-ended questions focusing on participants' personal experiences, perceived benefits, and which learning techniques of museum experiences.

2.3.Data Analysis

Interviews were transcribed by the researcher. A thematic analysis approach was employed to identify emerging themes and patterns related to museum education experiences.

3. Results

This thematic analysis provides a general overview of the considerations people have during their pre and post-museum visits.

3.1.Analysis of the post museum education

In this section, there are tables and explanations about the pre-museum experiences, skills, and learning techniques of the participants.

Table 1. Table of thematic codes within the experience category pre-museum

1. Historical Connection and Enlightenment:
Bridging the past and the present
Viewing artifacts from history
Witnessing past lifestyles and cultures
2. Interactive and Experiential Learning:
Interactive participation
Learning by seeing and doing
Discovering through senses
3. Cultural Enrichment:
Understanding different cultures and traditions
Relating and comparing artifacts from various civilizations
4. Personal Growth and Development:
Gaining new perspectives
Increasing curiosity and broadening interests
Developing culturally and socially
5. Fun and Entertainment:
Enjoying while learning
Spiritually satisfying experiences in art museums
6. Informative and Educational:
Gaining new information about various topics
Enlightening scientifically, historically, and culturally
Understanding the science and art history of ancient societies
7. Tangible Experiences:
Experiencing elements from past periods
Touching, seeing, and exploring materials

When the answers of the participants were analyzed, they expressed their museum experiences with "Historical Connection and Enlightenment, Interactive and Experiential Learning, Cultural Enrichment, Personal Growth and Development, Fun and Entertainment, Informative and Educational, and Tangible Experiences" themes. These themes highlight the

multifaceted experiences that museums offer to their visitors, ranging from educational and informative to personal growth and entertainment.

Overall, these thematic data points reflect the multifaceted nature of museums as educational and enlightening spaces. Museums not only offer information and knowledge but also engage visitors emotionally and intellectually, contributing to personal growth, cultural understanding, and an appreciation for history and the arts.

Some of her/his thoughts on pre-museum about their experiences are as follows:

"*It offers the opportunity to go from the present to the past, teaches new information, and enables to discover a new perspective."*

Table 2. Table of thematic codes within the learning skills category pre-museum

1. Cognitive and Analytical Skills:
Multiple ways of thinking.
Research, analytical thinking, chronological thinking.
Stimulates cognitive thinking.
Supports cognitive abilities, diverse viewpoints.
Critical and analytical thinking.
2. Sensory and Experiential Learning:
Multisensory learning.
Promotes experiential learning and lasting knowledge.
Enhances visual memory.
Boosts visual spatial intelligence.
Develops visual, auditory, and sensory abilities.
3. Historical and Cultural Understanding:
Supports historical knowledge acquisition.
Provokes historical curiosity.
Provides historical knowledge, aiding in history lessons.
Enables students to learn history firsthand.
Develops historical, cultural, and artistic interpretation skills.
4. Expressive and Communicative Skills:
Skills in seeing, reading, listening, speaking.
Develops observational, application, evidence collection, and expressive abilities.
Encourages hands-on learning.
Develops critical thinking, interpretation, cultural awareness.
5. Practical and Long-Term Learning:
Facilitates learning.
Enables better long-term learning.
Supports practical learning.
Supports long-term learning, utilizing accumulated knowledge.
6. Empathy, Awareness, and Personal Development:
Supports empathy, analytical thinking, problem-solving, and objective reasoning.
Boosts empathy and awareness.

This thematic analysis provides a structured categorization of the various skills and benefits offered by using museums for educational purposes. When the answers given by the participants were examined in this category, they stated that museum education developed "Cognitive and Analytical Skills, Sensory and Experiential Learning, Historical and Cultural Understanding, Expressive and Communicative Skills, Practical and Long-Term Learning, Empathy, Awareness, Personal Development, Academic, Subject-Specific Benefits, Interaction, Collaboration, and Psychomotor Skills".

In summary, the thematic data underscores the multifaceted advantages of museum visits. They enhance cognitive, sensory, and analytical skills, foster historical and cultural understanding, and promote expressive, communicative, and practical learning. Museums also contribute to personal growth, empathy, awareness, and subject-specific benefits, all while encouraging interaction, collaboration, and the development of psychomotor skills.

Some of her/his thoughts on pre-museum about learning skills are as follows:

"Supports research, analytical thinking, chronological thinking skills."

"Seeing old works of art in an academic sense can be more permanent in visual memory."

Table 3. Table of thematic codes within the learning techniques category pre-museum

1. Learning through Observation:
Learning by observing and experiencing
Learning through observation
Observation techniques
Learning by watching
2. Active Learning and Participation:
Active learning
Learning method involving student participation
Constructivist approach
Experiential learning
Activating the student
3. Group Work and Collaboration:
Group work
Collaborative learning
Debate, dramatization, role-playing, presentation
4. Question-Answer and Discussion:
Question and answer
Brainstorming
Predicting
5. Practical and Hands-on Learning:
Demonstrate and practice
Practical learning
Learning by doing and experiencing
Learning through demonstration
6. Research and Exploration:
Research-based learning approach
Learning through discovery
Research and study
Observation and research technique
7. Drama and Role Playing:

Drama
Role-playing and dramatization
Presentation techniques
8. Multiple Intelligences and Creativity:
Multiple intelligences
Creative learning
Creativity-based learning techniques
9. Visual Learning:
Learning visually
Visual teaching techniques
10. Problem Solving and Modeling:
Model creation
Problem-solving and model taking
11. Other:
Cognitive-affective development
Activating the receiver, directive method
Cognitive and developmental methods and techniques

When the answers of the participants were analyzed, they expressed learning techniques in museum education with "Observation, Active Learning, Question-Answer and Discussion, Practical and Hands-on Learning, Research and Exploration, Drama and Role Playing, Creativity, Visual Learning, Problem-Solving, and other" themes. This thematic analysis is to categorize possible learning methods and techniques that can be used in museums under various titles.

Some of her/his thoughts on pre-museum about learning techniques are as follows:

"Experiencing, observing, question and answer", "Methods and techniques based on narration and demonstration can be used".

3.2.Analysis of the post museum education

In this section, there are tables and explanations about the post-museum experiences, skills, and learning techniques of the participants.

Table 4. Table of thematic codes within the experience category post-museum

1. Surprise at Richness of Museum Education:
Students expressed surprise at the depth and richness of content in the museum education course.
They were amazed by the variety of activities available in museums, beyond just sightseeing.
2. Understanding the Importance of Museums:
Students gained a new appreciation for the significance of museums as educational tools.
They learned about interactive museums, planetariums, and different types of museums.
3. Enhanced Teaching Strategies:
Students acquired skills in planning educational visits to museums, catering to students' levels and needs.
The course taught them adaptability and the value of pre-visit planning.
4. Shift in Perspective:
Students' perspectives on museums shifted from casual visits to educational opportunities.
They recognized museums as platforms for multi-dimensional learning.
5. Experiential Learning and Engagement:

Students appreciated the hands-on and experiential learning opportunities museums offer.
They acknowledged the effectiveness of engaging learning methods.
6. Empathy, Flexibility, and Collaboration:
The course emphasized the importance of empathy, adaptability, and collaboration during museum visits.
Students learned how to manage groups effectively and work collaboratively.
7. Integration of Subjects and Creative Learning:
Students realized the potential for integrating various subjects, including unexpected ones like mathematics, in museum education.
They saw how diverse learning styles could be incorporated in museum activities.
8. Practical Knowledge and Future Applications:
Students gained practical knowledge about planning, executing, and enhancing museum visits for educational purposes.
They saw the relevance of this knowledge for their future teaching careers.
9. Perception of Museums as Learning Environments:
Students understood that museums offer more than just cultural experiences; they can be effective learning environments.
They learned to plan educational activities within the museum context.
10. Group Work and Collaboration:
Students appreciated the collaborative nature of the course and its relevance for future teamwork.
They recognized the value of group activities during museum visits.
11. Empowerment and New Perspectives:
The course empowered students to view museums as versatile learning tools.
They gained insights into presenting educational content in a dynamic and engaging manner.
12. Flexibility and Student-Centered Approach:
Students realized the importance of flexibility while conducting museum education and adapting to students' needs.
The course taught them to approach teaching with student-centered strategies.
13. Integration of Theory and Practice:
The course structure, including theoretical content followed by practical application, was found effective by the students.
They appreciated the blend of theory and hands-on experience.
14. Cognitive and Emotional Impact:
Students were emotionally engaged and intellectually stimulated by the course's content and activities.
They recognized the potential of museum education to evoke strong reactions.
15. Personal Growth and Learning from Experience and Lifelong Learning :
Students personally grew through the course, becoming more open to learning from diverse settings.
They appreciated the value of experiential learning and its impact on personal development.
16. Integration of Cultural and Historical Aspects
They realize the cultural and historical aspects of education
They understand how history and culture can be integrated into teaching.

These themes capture the students' thoughts, feelings, and learnings from the museum education course. When the table is examined, it can be interpreted that the views of the participants developed and changed after the museum education.

Some of her/his thoughts on post-museum about their experiences are as follows:

“I learned that learning is a continuous process and can happen in different settings."

"Museum education helped me understand how history and culture can be integrated into teaching."

Table 5. Table of thematic codes within the learning skills category post-museum

1. Enhanced Learning through Experience:
Students can reinforce theoretical knowledge by experiencing it in museums.
Making lessons more tangible and engaging by using various materials.
Providing a real-world context for learning, enhancing understanding.
Learning by observing and interacting in a new environment.
Learning through direct application and practical experiences.
Encouraging active, hands-on learning.
Experiencing concepts firsthand for better comprehension.
2. Cognitive and Creative Benefits:
Enabling students to think critically and problem-solve.
Developing observation and analytical skills.
Fostering creativity and imagination.
Encouraging students to ask questions and explore.
Enhancing cognitive development and critical thinking.
3. Social Interaction and Collaboration:
Promoting teamwork and collaborative learning.
Encouraging social interaction and communication.
Enhancing social skills and cooperation.
4. Learning Variety and Holistic Understanding:
Allowing students to learn through multiple senses.
Encouraging holistic and multidimensional learning.
Enriching education through diverse experiences.
5. Interest and Curiosity:
Sparking curiosity and interest in learning.
Fostering a passion for exploration and discovery.
6. Educational Innovation:
Utilizing museums for innovative and effective education.
Supporting various learning styles and preferences.
7. Learning from Different Perspectives:
Encouraging a broader outlook and understanding.
Expanding students' viewpoints and thinking.
8. Critical Thinking and Problem Solving:
Encouraging critical thinking and analytical skills.
Promoting problem-solving abilities.
9. Self-Expression and Empathy:
Encouraging self-expression through art and creativity.
Developing empathy through exposure to diverse perspectives.
10. Enhanced Intellectual Knowledge:
Broadening general knowledge and understanding.
Encouraging intellectual development.
11. Influence on Academic Interest:

Generating interest in various subjects through interactive experiences.
Fostering a love for learning.
12. Active Learning and Understanding:
Enabling active learning through participation.
Enhancing understanding and comprehension.
13. Learning Enrichment:
Enriching education through diverse experiences.
Encouraging multidimensional learning.
14. Curiosity and Exploration:
Fostering curiosity and a sense of exploration.
Encouraging students to discover new interests.
15. Real-Life Contextualization:
Relating classroom content to real-life scenarios.
Enhancing understanding through practical examples.

When the answers given by the participants after the museum training were examined, they stated that they developed many skills necessary for 21st century skills in the category of learning techniques.

Participant's opinions in this category expressed after the museum education were that it affected the children's skills more than before the museum education.

Some of her/his thoughts on post-museum about learning skills are as follows:

" prompts students to ask questions, Develops students' imagination, It enables students to think creatively and be creative."

Table 6. Table of thematic codes within the learning techniques category post museum

1. Collaborative Learning:
Collaborative learning, teamwork, group work.
Collaborative techniques, teamwork-based approaches.
2. Interactive Techniques:
Drama, role-playing, creative drama.
Experiential learning, hands-on learning, game technique.
Demonstration, show and do, interactive presentations.
3. Question-Answer and Discussion:
Question-answer technique, Socratic questioning.
Discussion, brainstorming, open dialogues.
4. Observation and Experience:
Observation technique, experiential learning, field trips.
Observation, circle activities, guided tours.
5. Cognitive Techniques:
Six thinking hats, analogy technique, creative thinking.
Problem-solving approaches, brainstorming.
6. Varied Presentation Methods:
Presentation, storytelling, narration.
Presentation method, visual and auditory learning.
7. Problem-Based and Project-Based Learning:
Problem-based learning, project-based learning.
Case study, example case analysis, problem-solving.
8. Innovative Techniques:

Synectics, SWOT analysis, seek-find technique.
9. Role-Playing and Simulation:
Role-playing, simulation, enactment.
Dramatic techniques, role-playing scenarios.
10. Learning Through Engagement:
Engagement, active learning, participation.
Circle activities, hands-on engagement, interactive methods.
11. Multiple Approaches:
Various methods and techniques combined.
Adaptation of different techniques for effective learning.

When the answers given by the participants after the museum training were examined, they stated that they developed many skills necessary for 21st century skills in the category of learning techniques.

Some of her/his thoughts on post-museums about learning techniques are as follows:

"Learning methods and techniques such as brainstorming, collaborative learning, question-answer, discussion, drama, role playing, fishbone technique, thinking with six hats/shoes, station, project based, case study, problem based can be used in museums."

4. Discussions

The presented study explores the transformative role of museums in the pedagogical field and underlines the various educational benefits these areas provide. The data delineates a pronounced shift in primary and preschool education teacher candidates' perceptions post their museum education exposure, emphasizing the value museums add to the teaching and learning spectrum.

Central to the findings is the enhancement of cognitive skills. As in the findings of Clark, Ensminger, Incandela, & Moisan (2016), participants in this study displayed elevated cognitive capacities post their museum engagements. The experiential nature of museums, as corroborated by Dewey (1938), facilitates a more holistic learning environment, pushing students beyond rote learning into a realm of inquiry-based cognition. The tangible exhibits and the autonomy to interact at will seem to spark an innate curiosity, driving students to think critically and form connections with prior knowledge, as observed by Anderson, Lukas, Ginns & Dierking (2000).

Another salient outcome of the research revolves around pedagogical innovations. Teachers, post their museum education experiences, have demonstrated a more nuanced understanding of diverse teaching strategies, aligning with Hein's (2002) and Crowley, Pierroux & Knutson, (2014) assertion of museums serving as a melting pot of formal and informal education. The museum space, with its dynamic range of learning modules from role-play to interactive displays, allows teachers to visualize and implement differentiated teaching strategies catering to the varied learner profiles.

Socio-culturally, museums have showcased undeniable influence. This research brings to the fore the profound impact of museums in cultivating cultural awareness, fostering empathy, and nurturing the ability to appreciate diverse viewpoints. The study of Aktın (2017) also confirms that the concrete objects in the museum improve the historical empathy skills of the participants. This supportive by ith the insights from Paris (2002) and DeWitt and Storksdieck

(2008), highlighting how museum spaces are more than mere venues of historical preservation - they are platforms for fostering global citizens.

Furthermore, this study sheds light on an intriguing facet – the correlation between familiarity with museums and enhanced engagement. Ellenbogen, Luke, and Dierking (2004) had previously explored this notion, emphasizing how repeated exposure to museum spaces could catalyze deeper cognitive engagement and knowledge assimilation. The findings mirror this sentiment, suggesting the potential of integrating regular museum visits within the school curriculum, fostering long-term educational benefits.

The emphasis participants placed on 'skills and thinking styles' post their museum education exposure is a testament to the evolving perception of museums. The results of this study are also supported by the study of Dilli, Dümenci, Kesebir (2018). No longer confined to the realm of passive historical exploration, museums in the 21st century, as posited by Hooper-Greenhill (2020), are arenas of vibrant learning, challenging traditional classroom paradigms and spearheading a revolution in experiential education.

However, while the benefits are numerous, it's essential to address potential limitations. While museums offer a plethora of resources, the onus lies on educators to harness their potential effectively. The disparity between traditional classroom teachings and museum experiences can be vast, and bridging this requires concerted efforts. Additionally, there's a need for ongoing teacher training to maximize museum-based learning outcomes. According to Akman, Altınkaynak, Altinkaynak, Ertürk & Gül (2015) study although preschool teachers believe in the necessity of museum education, it has been determined that they are insufficient in using museums as an educational environment.

In conclusion, as the educational landscape evolves, so does the role of museums. Their potential as tools for holistic learning is vast, but realization hinges on collaboration, innovation, and a shared vision among educators, museum curators, and policymakers.

5. Conclusions

Participants expressed their museum experiences before the museum education by emphasizing the historical aspect. In their views after the museum education, they focused on the skills and thinking styles developed by the museum, and on the enriched educational aspects (Tables 1 – 4).

It is seen that the answers given by the participants after the museum under the category of educational skills contain richer expressions. This situation reveals the importance of museum education (Tables 2- 5).

In the category of learning techniques before museum education, it is seen that the learning techniques and skills of the participants are confused. However, they expressed more clearly and comprehensively which techniques they would use after the museum education. (Tables 3-6).

In conclusion, museums play a multi-faceted role in education, offering tangible and interactive experiences that benefit cognitive development, enhance memory retention, foster social interaction, and bridge the gap between theory and real-world application. They also play a vital role in cultural education, helping students connect with the past and understand differing perspectives. The use of museums in teaching can thus offer a comprehensive and enriching educational experience.

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