

# Learning at the Museum

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## Abstract

*Museums are informal environments for learning, where learning is truly initiated and processed through curiosity, observation and the activity. This kind of a learning process can be different from the processes in formal learning surroundings. A special opportunity offered by the museums is the experimental nature of learning which is based on encounters with actual objects. In informal environments the cognitive and the affective learning are connected and can upgrade each other. The aim of this study was to explore students' opinions about learning at the museum, the efficiency of this kind of work and the positive connotations to children's education. The effect of the "gender" variable at forming the attitude was also explored. The number of the participants in this research was 380 students of which 140 were male and 240 were female students. The students generally highly valued the importance of this kind of learning, and they consider it efficient, and thus a necessary part of the students' education. The results gained in this way should promote and encourage the expansion of cooperation between museums and educational institutions.*

**Key words:** education; pupil; student; teaching

## Introduction

Learning is a very important process necessary for every person in order to become a social being. The entire culture and art of mankind exists due to the process of learning (Tomić, & Osmić, 2006, p. 113). Each generation could use the experiences and discoveries of previous generations but also contribute to the development of science, art and material goods.

From the psychological aspect, learning represents a process in which the activity is developed or is changing, following the reactions of the organism to the surrounding. In the most general sense of the word, it is a process of accommodation to the surrounding that is constantly changing. Learning must help a man to fulfil himself as best as he can, to adjust to the circumstances, to change them and in that way to change himself.

The broad and relatively unlimited reach of man's learning is attempted to be explained by different approaches, methods and types of the human learning. So, different theories of learning have been made: behaviouristic theories, learning by imitation, theories of learning by insight, learning by information processing, etc. (Lavrnja, 1996, p. 11).

R.M. Gagne tried to systemize different hierarchical types of learning "taxonomy of the hierarchical order of ways of learning": learning of the signals, chain learning, language associations, learning of the terms, learning of the rules, solving the problems (Gagne, 1965).

In recent times people talk about effective or affective learning. This term often has different meanings. The first meaning refers more to the sensory, right part of the brain which is responsible for learning. The dictionary defines it as "emotion or a feeling connected to the idea or a thing". Affective learning is often in contrast with cognitive learning which is more verbal, based on information and important for the left hemisphere of the brain. We could also call it learning through experience. The other meaning of the term itself refers to the acquisition of attitudes and values. Ross Loomis says: affective criteria are based upon acquired sensory reactions to exposed postulates, materials, values, preferences and very often are referred to the acquisition or modification of the specific attitudes (Loomis, 1983, p. 3).

Mihaly Csikzentmihaly's work shows that when people are truly involved in some activity and when they are in a state of intensive concentration or connection, everything they do comes to them by itself. That experience can happen with any activity, from sport to learning. The work describes state of the mind which is optimal for learning. That state of the mind is truly important because it is connected to how people feel while they are doing something. According to the above mentioned author people must not be too bored, or too impatient. Somewhere in the middle is the real feeling.

When learning at a museum, the nature of affective learning emerges as a result of taking care of visitors' feelings, experiences and everything else which can contribute to their meeting with artefacts. That is why the first reaction is affective, the one which shapes the visitors' opinion about experience given to them (Csikszentmihalyi, 1990, p. 28).

Teaching strives to be connected to verbal ways such as the written or said words. But experiences overcome words and function on a natural, emotional and sensitive level, so the information can be received through imagery and symbolic ways. It is important to understand that a visit to a museum is first of all a psychological meeting, so psychological facts about the lighting and presentation of an object or artefact in general make a first impression on a visitor. Learning is preceded at many levels which overcome the written messages.

Although the basic function of a museum is known as collecting, recording and keeping of the past, it is polyvalent. Museums are also lively and educational spaces at the disposal of users of various ages. A museum as a part of the social surrounding can

be an important factor in the development of education and therefore an interesting learning space. Museum spaces can function as places for learning, and their special advantage is plainness, as one of the basic didactic principles.

However, the question of how to assess learning at the museums causes a lot of difficulties. The issues concerning the use of traditional approaches of assessing learning at a museum are considered by a great number of scientists. The visitors of the museums often learn things which are not revealed through formal tests (Birney, 1995). Researchers (Falk, & Dierking, 1992) affirmed that museum visitors can rarely recall certain facts or terms after visiting a certain museum, and they suggest that the issue of learning assessment at a museum if done in a formal way, the way which is done at schools, should be ignored. They also point out that learning is incremental and that a visit to the museum forms only partial consolidation and growth of ideas, and that it also neglects the real aspects of learning. The difficulties in assessing learning at a museum are also discussed due to the non-structural nature of possibilities and conditions for learning (Falk et al., 1986). These authors confirmed that the significant differences between the museum and the classroom should be taken into consideration when thinking about the assessment of learning in such different environments. What are the characteristics that should be taken into consideration when learning in a museum surrounding?

### ***Museum Characteristics***

Museums are informal environments for learning, where learning is truly initiated and processed through curiosity, observation and activity (Ramey-Gassert, Walberg, & Walberg, 1994). In these environments visitors choose what they want to experience, while the possibilities for learning can be fragmental and non-structural. This kind of a learning process can be different from those learning processes which we relate to formal environments during learning. The informal nature of the surrounding means that it is not possible to determine specific contexts and contents to which the pupils, or those who learn, are exposed. There is an increased possibility that self-directed learning and generalisations above the specific contents will occur, as the museums tend to give the pupil the capability to identify with the content through personal experience and environment (Falk, Koran, & Dierking, 1986). A special instance offered by museums is the experimental nature of learning which is based on the encounter with real objects. It is a process which includes watching, producing questions, browsing and comparing (Shepard, 1993). Learning at museums includes sharpening the perception skill and developing the sense of curiosity (Voris, Sedzielarz, & Blackmon, 1986). In informal environments, cognitive and affective learning are connected and can upgrade each other. In a similar way education and pleasure are connected (Bitgood, Serrell, & Thompson, 1994). The very personal nature of learning at museums, the short time during which pupils are involved in this specific experience, and the individual context in which it occurs makes pointless the attempt to assess learning at the museum in the same way as learning in the classroom.

### ***The Nature of Learning***

When thinking about assessing learning we have to take into consideration the nature of learning itself. The constructional paradigm of learning describes learning as a developing process which incorporates new experiences into previous knowledge and attitudes. Our perceptions of life are conditioned and suppressed by our experience, and that means (as we all have different experiences) that we all probably will have different perceptions of the ideas, actions, behaviours, accidents, tasks, feelings, etc. (Bentley and Watts, 1994, p. 8). Furthermore, it is recognised that learning involves making connections between experiences coming from all sources, and because of that it is not possible to determine which aspect of the visitor's understanding of the specific idea is the result of the museum experience itself. Learning is a continuous process, we take information through our senses and we interpret them – they grow, and that rarely happens immediately. The more experiences we have, the more information is available to explore with and create new ideas.

### ***The Alternative Perspective***

In the environment in which pupils create their own meaning from the experienced: *the important issues which are involved in the understanding of learning are taken out before analysing the action of the person who is learning rather than from the subject which is learnt, i.e. the conditions which encourage learning are such that if we increase them we can't predict what will be learnt, we can't predict what meaning pupils will create from the experience we gave them* (Hein, 1995, p. 191).

The request for “museum as a teacher” or “a museum as a place for learning” is suggested (Hein, 1995). From the constructivists' perspective there is not a necessary connection between an occasion for learning and learning itself; i.e. the increase of conditions for learning means that we cannot predict what will be learnt: *there is a whole different world of learning which happens in the museums, the learning built up from the visitors, from their experiences and not necessarily connected to our effort as teachers. In order to understand museum visitors and to find out what they have learnt, we have to have a wide range of the museum's evaluations which includes a rich binding of quality naturalistic research in the area of museums* (Hein, 1995, p. 201).

Learning at museums implies the development of understanding of concepts by observing relations, connections and causes, including random ideas and previous experiences (Lukas, 1993).

Learning in informal environments is not direct, explorative, voluntarily and personal. In other words, it is more useful to observe how students learn, than to explore what they have learnt. In order to explore the specificity of learning during a museum visit, it is more valuable to look at the process which shows that learning is taking place.

### ***Indicators of Engagement in the Learning Processes***

The literature dealing with tracing indicators in the process of learning presents those indicators mostly as behaviours which occur in positive learning environments.

Some researchers observed behaviour in museums that can support learning. In the overview of this literature (Borun et al., 1996) a series of behaviours connected to learning which can be used as a useful indicator of learning process is enumerated: *making questions and giving answers, conversation about the exhibition, focusing on a certain part of the exhibition, reading the text that describes an artefact, involvement in different activities, and even simply observation of the exhibit* (Borun et al., 1996, p. 135).

These descriptions of behaviours are very similar to the components of a truly motivational museum experience, and they are: curiosity, confidence, challenge, control, presentation and communication (Perry, 1993).

Considerations more oriented to the task were also described (Linn and Leatsch, 1976), pointing to positive conditions for learning which include: observing how much time students spend with materials, is their experience complete, the sequence in which they perform their activities, do they leave and then come back again, do they talk with other visitors.

Foster's research uses a combination of the process indicators and orientation towards the task: time for the task, execution of the task and verbal fluency are important predicates for successful learning (Koran et al. 1996, p. 6).

Other authors beyond the domain of learning at museums described favourable surroundings for learning (Bentley, & Watts, 1994, p. 16) and they describe 7 indicators of active learning:

Other authors beyond domain of learning at the museums described favourable surroundings for learning (Bentley, & Watts, 1994 pg. 16) and they describe 7 indicators of active learning:

- Initiation of own activities and taking responsibility for their own learning
- Making decisions and solving problems
- Transfer of skills from one context to the other
- Individual and group work
- Showing comprehension and competency in numerous different ways
- Encourage self-evaluation
- Feel good – be satisfied with yourself as a pupil.

Pupils learn successfully even when they:

- Offer their ideas
- Support their opinions with proofs
- Listen and recognize others ideas
- Ask for explanation through trying, challenges and exploring others opinions
- Expand, modify or change their opinions when there are proofs which suggest a need for that
- Ask questions about complicated things
- Ask further questions which suggest development of important ideas and opinions
- Have ideas that help them in research

- Think out their own researches
- Look for the causes, similarities and differences which can exist in their observation
- Recognize ideas contained before and after given themes
- Give reasons for changing or continuing their opinions
- Research the theme out of the context of school programme
- Comprehend important ideas about the world (Faire, & Cosgrove, 1988, p. 1988 pg. 28).

Harlen in the book "The Teaching of Science" (Harlen, 1992), gives a chapter about the indicators of teacher's self-development and offers a list of children's activities as a basis for making a conclusion about learning:

- the extent to which children spend a great deal of time during the task talking to each other about their work;
- the extent to which they are preoccupied with their work, if they experience it important for them;
- the extent to which they comprehend what they are doing, not just following others;
- the extent to which their work is at an adequate level so that their ideas can be used and comprehended;
- the extent to which children handle and explore the material in order to answer their questions;
- the extent to which they use thinking and manipulative skills in an effective way in order to improve their ideas.

The labelled similarities which exist between these lists of factors could be used as one useful set of indicators. Before doing that, it is necessary to process shortly a few other fields. Knowledge of family and group behaviour is necessary when you point out the importance of social interaction at the museum. What a child can do when somebody helps (assists) him can even be a greater indicator of learning than what a child can do by himself (Vygotsky, 1978).

These postulates and theoretical considerations about learning at the museum as an informal and stimulating environment for learning were starting points for carrying out research among students of Faculty of Philosophy in Split, in January 2010. This research wanted to determine students' opinions about learning at the museum, and to see if they think it is important and effective for children. The participants were 380 students, of which 140 male and 240 female students between 19 and 23 years old.

The aim of this study is:

- to examine students' opinions about learning at the museum and its importance;
- to examine the opinions that if children are taken to museums at an early age they will create a habit of independently visiting museums later in life;
- to examine opinions of students whether this kind of learning creates an affinity towards the fine art.

## Research Methodology

### *Sample of Participants and Data Collection*

The research was conducted among students of the Faculty of Philosophy and it included all study groups. The total number of the participants was 382 of which 142 were male and 240 female. The sample was calculated based on Blalock's formula (Blalock and Blalock, 1968), where the mistake of the choice is 1% with the degree of reliability of 99%.

From the entire sample of participants, 380 students turned in a properly filled in questionnaire.

For this purpose data was gathered using a specially constructed anonymous questionnaire of a closed type, which included operational relative indicators and variables of the researched topic. Evaluation scales, in this case Likert's scale, questions of dichotomous type and questions with multiple choices were used in the questionnaire. During the survey, students were given an additional explanation for each question. The analysis of the completed questionnaires showed that students conscientiously and responsibly answered the questions since out of the 382 questionnaires only two of them were excluded from the processing.

### *Data Processing*

Data processing was done using the statistical programme SPSS – 13 (Statistical Package for the Social Sciences), more specifically using the following statistical calculations:

Frequencies and percentages

Chi-squared test

Spearman's rank correlation.

## Results and Discussion

**Table 1.** *Do you think that learning at the museum is efficient for children?*

	Male		Female		Σ	
	f	%	f	%	f	%
<b>Yes</b>	77	55%	170	71%	247	65%
<b>No</b>	43	30%	39	15.5%	82	22%
<b>I Don't Know</b>	21	15%	30	13.5%	51	13%
<b>Σ</b>	141	100%	239	100%	380	100%

<b>χ<sup>2</sup></b>	<b>22.73</b>
<b>P</b>	0.01
<b>df</b>	2

Table 1. shows that the examinees (male and female) differ in the evaluation statistically at the highest level of relevance. Female participants exhibited a higher

percentage (72%) regarding the statement that learning at the museum is efficient for children, while this percentage is considerably lower with male examinees (55%). 13% of female and 15% of male participants gave a negative answer, while 15% of female and 30% of male subjects opted for the answer “I don’t know”. This leads to the fact that female students give far more importance to learning at museums than male students.

**Table 2.** *Do you think that children like to learn at the museum?*

	Male		Female		$\Sigma$	
	f	%	f	%	f	%
<b>Yes</b>	70	49%	141	60%	211	56%
<b>No</b>	53	37%	55	23%	108	29%
<b>I Don't Know</b>	20	14%	41	17%	61	15%
<b><math>\Sigma</math></b>	143	100%	237	100%	380	100%

$\chi^2$	<b>8.40</b>
<b>p</b>	0.05
<b>df</b>	2

The second table (Table 2) shows that participants (male and female) statistically significantly differ in their evaluations. Of the female participants, 60% claim that learning at museums is efficient for children, while this percentage is considerably lower with male participants (49%). 23% of female and 37% of male participants gave a negative answer, while 17% of female and 14% of male subjects opted for the answer “I don’t know”. This shows that female students give far more importance to learning at the museum than male students.

**Table 3.** *Do you think that taking children from their early age to the museum will create a need for independently visiting museums later in life?*

	Male		Female		$\Sigma$	
	f	%	f	%	f	%
<b>Yes</b>	81	58%	157	66%	238	62%
<b>No</b>	30	21%	39	16%	69	18.5%
<b>I Don't Know</b>	29	21%	44	18%	73	19.5%
<b><math>\Sigma</math></b>	140	100%	240	100%	380	100%

$\chi^2$	<b>2.33</b>
<b>p</b>	0.10
<b>df</b>	2

Table 3 shows that the gender of participants did not considerably influence their opinions, because the degree of significance is at higher level than 0.10. 66% of female and 58% of male participants gave a positive answer to this question. A negative answer was given by 16% of female and 22% of male subjects, while the answer “I don’t know” was selected by 18% of female and 21% of male participants. Overall, the



opinion that taking children to museums at an early age will create a habit of visiting museums later in their lives is prevalent.

**Table 4.** Do you think that learning at the museum develops in a child the affinity towards the art?

	Male		Female		Σ	
	f	%	f	%	f	%
<b>Yes</b>	68	48%	134	56%	202	53%
<b>No</b>	43	31%	48	24%	101	27%
<b>I Don't Know</b>	30	21%	37	20%	77	20%
<b>Σ</b>	141	100%	239	100%	380	100%

<b>χ<sup>2</sup></b>	<b>2.41</b>
<b>p</b>	0.10
<b>df</b>	2

The above table (Table 4) shows that there are no differences between participants regarding this statement as the degree of significance is at a higher level than 0.10. A positive answer to this question was given by 56% of female and 48% of male participants, and those differences were significantly lower which is visible in the results of the Chi-squared test. The answer NO was given by 24% of female and 31% of male subjects, while the answer “I don’t know” was given by 20% of female and 21% of male participants. The results are more coherent which is clearly visible from the calculations of the Chi-squared test. If we look at the total sample, the majority of male and female participants (53%) think that learning at a museum will develop in children the affinity towards the art.

**Table 5.** According to you how important is it to take children to museums?

	Male		Female		Σ	
	f	%	f	%	f	%
<b>1</b>	2	1%	3	1%	5	1%
<b>2</b>	22	16%	22	9%	44	12%
<b>3</b>	47	33%	74	31%	121	32%
<b>4</b>	36	26%	59	25%	95	25%
<b>5</b>	34	24%	71	34%	115	30%
<b>Σ</b>	141	100%	239	100%	380	100%

<b>χ<sup>2</sup></b>	<b>6.13</b>
<b>p</b>	0.05
<b>df</b>	4

The aim of this question was to determine how students rank the level of importance of visiting museums. Rank 1 in this case represents the lowest level of importance, while rank 5 represents the highest level of importance. A moderate degree of significance is noticed with respect to the gender at the level of 0.05 which is shown by the Chi-squared test.

In Table 5, the 1<sup>st</sup> rank stands for total denial of importance of visiting museums, and only 1% of male and female participants opted for this answer. The 2<sup>nd</sup> rank was selected by 9% of female and 16% of male subjects, while the 3<sup>rd</sup> rank was circled by 31% of female and 33% of male participants. Rank 4 – very high importance- was marked by 25% of female and 26% of male subjects, while 34% of female and 24% of the male participants circled rank 5 for this question.

When the total results were calculated, they showed that 55% of students decided for ranks 4 and 5 which tell us that the students have a developed awareness about the importance of visiting museums. If you add to this 32% of students who opted for rank 3, which represents a moderate importance of learning at the museums, then we can certainly say that students think that this kind of learning is efficient, and therefore necessary in the education of children.

## **Conclusion**

Museums as informal surroundings for learning can surely contribute to a more quality learning and education of a person in general. While learning at a museum has its limitations, which are also present in classroom learning, it also has advantages such as learning through experience, and plainness as a basic didactic principle. In spite of the advantages, this kind of learning is not used enough in our system of education. Although visits to museums are practised at all levels of education, such out of classroom teaching is rare and sporadic. However, research such as this one, conducted among students and the results obtained should promote the issue and encourage comprehensive cooperation of the museums and educational institutions, from kindergartens to higher educational institutions.

Research regarding this topic should be continued, more specifically, the next step would be to find out teachers' and pupils' opinions. Having information from these two populations would provide a more complete picture which can already be anticipated. It moves towards a partial redirection of the classes from the classrooms to new, motivating surroundings such as museums.

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# Učenje u muzeju

## Sažetak

*Muzeji su neformalna okruženja za učenje, u kojima je učenje istinski motivirano i procesirano preko znatiželje, promatranja i raznih aktivnosti. Proces takva učenja može biti drugačiji od procesa učenja koje vežemo uz formalna okruženja. Posebna prilika koju muzeji nude jest eksperimentalna priroda učenja koja se temelji na susretima sa stvarnim objektima. U neformalnim okruženjima kognitivno i afektivno učenje su povezani i mogu se nadograditi. Cilj ovog rada bio je istražiti stavove studenata o učenju u muzeju, njegovoj učinkovitosti i pozitivnim konotacijama na odgoj i obrazovanje djece. Istraživan je utjecaj varijable spola na oblikovanje stavova. U istraživanju je sudjelovalo 380 studenata, od toga 140 muškaraca i 240 žena. Studenti su visoko ocijenili značaj takva načina učenja, smatraju ga učinkovitim i potrebnim u odgoju i obrazovanju učenika. Dobiveni rezultati trebali bi aktualizirati temu poticanja sveobuhvatnije suradnje muzeja i odgojno-obrazovnih ustanova.*

**Ključne riječi:** obrazovanje; podučavanje; studenti, učenici

## Uvod

*Učenje je veoma važan proces neophodan svakoj osobi da bi postala socijalno biće. Zahvaljujući procesu učenja, stvorena je cjelokupna kultura i umjetnost čovječanstva (Tomić i Osmić, 2006; 113).*

Svaka generacija mogla se koristiti iskustvima i otkrićima prethodnih generacija i dati svoj doprinos razvoju znanosti, umjetnosti i materijalnih dobara.

Gledano s psihološkog aspekta učenje je proces u kojem nastaje ili se mijenja aktivnost u pratnji reakcija organizma na okolinu. U najopćenitijem smislu riječi učenje je proces prilagođavanja na stalno promijenjenu okolinu, ono je proces modifikacije ponašanja. Čovjek cijeli život uči i tako se prilagođuje svijetu koji se brzo mijenja. Učenje mora pomoći čovjeku da se sam što bolje ostvari, prilagođuje okolnostima, da ih mijenja i pri tome mijenja samog sebe.

U širokom opsegu i relativno neograničenom dosegu čovjekova učenja pokušavaju se objasniti različiti pristupi, načini i tipovi ljudskog učenja. Tako su nastale različite teorije učenja: biheviorističke teorije, učenje oponašanjem, teorije učenja uvidom, učenje preradom informacija itd. (Lavrnja, 1996; 11).

R. M. Gagne pokušao je usustaviti različite hijerarhične tipove učenja u „taksonomiju hijerarhičnog poretka načina učenja“: učenje signala, lančano učenje, jezične asocijacije, učenje pojmova, učenje pravila, rješavanje problema ( Gagne, 1965).

U novije vrijeme govori se i o djelotvornom ili afektivnom učenju. Taj naziv često ima različita značenja. Prvo se značenje odnosi više na osjetilni, senzorni, desni dio mozga zadužen za učenje. Rječnik daje definiciju „emocija ili osjećaj vezan za ideju, predmet“. Afektivno učenje često je u suprotnosti s kognitivnim učenjem koje je više verbalno, utemeljeno na informacijama i značajno za lijevu hemisferu mozga. Još bi ga se moglo nazvati i učenjem putem doživljaja. Drugo značenje naziva odnosi se na stjecanje stavova i vrijednosti. Ross Loomis kaže: *Afektivni kriteriji baziraju se na stečenim osjetilnim reakcijama za izložbene postavke, materijale, vrednote, sklonosti i veoma često se odnose na stjecanje ili promjenu specifičnih stavova* ( Loomis, 1983; 3).

Rad Mihalya Csikzentmihalyia pokazuje da ljudi, kada su istinski uključeni u neku aktivnost i u stanju su intenzivne koncentracije ili povezanosti, sve što rade dolazi im samo od sebe. To iskustvo može se dogoditi u bilo kojoj aktivnosti, počevši od sporta, do učenja. Rad opisuje stanje uma koje je optimalno da bi se učenje odvijalo. To stanje uma istinski je bitno, jer ima veze s tim kako se ljudi osjećaju dok nešto rade. Prema tom autoru ne smije im biti ni previše dosadno, niti trebaju biti previše nestrpljivi. Negdje u sredini jest pravi osjećaj.

Kod učenja u muzeju priroda afektivnog učenja dolazi osobito do izražaja jer je potrebno paziti na osjećaje posjetitelja, njihove doživljaje i sve ostalo što može doprinijeti njihovu susretu s artefaktima. Zato je prva afektivna reakcija ona koja oblikuje posjetiteljevo mišljenje o doživljaju koji mu je pružen (Csikszentmihalyi, 1990; 28).

Podučavanje teži tome da bude vezano uz verbalne načine kao što su pisane ili izgovorene riječi. Ali doživljaji nadilaze riječi te funkcioniraju na prirodnom, emocionalnom i osjetilnom nivou tako da informacije mogu biti primljene na vrlo imaginarne i simboličke načine. Potrebno je razumjeti da posjet muzeju u prvom redu psihološki susret, te su psihološke činjenice o osvjetljenju i općenito o prezentaciji objekta ili artefakta ono što stvara prvi dojam kod posjetitelja. Učenje se odvija na mnogo razina koji nadilaze pisane poruke.

Iako je temeljna muzejska funkcija prikupljanje, bilježenje i čuvanje prošlosti, ona je polivalentna. Muzeji su također životni i edukacijski prostori namijenjeni korisnicima različite dobi. Muzej kao dio socijalne sredine može biti značajan čimbenik razvoja i zanimljiv prostor odgoja i obrazovanja. Muzejski prostori mogu djelovati kao mjesta za učenje, a njihova je osobita prednost zornost, kao jedan od temeljnih didaktičkih principa.

Međutim, prema nekim autorima, pitanje kako prosuditi učenje u muzejima izaziva dosta poteškoća. Probleme koji se tiču upotrebe tradicionalnih pristupa prosudbi učenja u muzejskom prostoru razmatrao je velik broj znanstvenika. Posjetitelji u muzejima često uče ono što nije otkriveno u formalnim testovima (Birney, 1995).

Istraživači (Falk i Dierking, 1992) su utvrdili da se muzejski posjetitelji rijetko mogu sjetiti određenih činjenica ili pojmova nakon posjeta određenom muzeju i predlažu da se problem s mjerenjem učenja u muzejima na formalan, školski način, zanemari, te ističu da je učenje inkrementalno i posjet muzeju oblikuje samo djelomičan dio konsolidacije i rasta ideja, ali i zanemaruje stvarne aspekte učenja. Također se raspravlja o poteškoćama mjerenja učenja u muzeju (Falk i suradnici, 1986) zbog nestrukturirane prirode mogućnosti i prilika za učenje. Ti su autori utvrdili da značajne razlike između muzeja i školske učionice trebaju biti uzete u obzir prilikom razmišljanja o mjerenju učenja u tim različitim okruženjima. Koje karakteristike treba uzeti u obzir kod učenja u muzejskom okruženju?

### ***Karakteristike muzeja***

Muzeji su neformalna okruženja za učenje, u kojima je učenje istinski motivirano i procesirano znatiželjom, promatranjem i raznim aktivnostima ( Ramey-Gassert, Walberg i Walberg, 1994). U tim okruženjima posjetitelji biraju ono što žele iskusiti, prilike za učenje mogu biti fragmentirane i nestrukturirane. Takav proces učenja može biti drugačiji od onih procesa učenja koje vežemo uz formalna okruženja prilikom učenja. Neformalna narav okruženja znači da nije moguće odrediti specifične kontekste i sadržaje kojima su izloženi učenici, dakle oni koji uče. Postoji povećana vjerojatnost da će se pojaviti samousmjereno učenje i generaliziranje iznad specifičnih sadržaja, budući da muzeji nastoje učeniku dati sposobnost poistovjećivanja sa sadržajem putem osobnog iskustva i okruženja (Falk, Koran i Blackmon, 1986). Posebna prilika koju muzeji nude jest eksperimentalna priroda učenja koja se temelji na susretima sa stvarnim objektima. Dakle, to je proces koji uključuje gledanje, postavljanje pitanja, pregledavanje i uspoređivanje (Shepard, 1993). Učenje u muzejima uključuje oštrenje percepcijskih vještina i razvijanje osjeta znatiželje (Voris, Sedzielarz i Blacknom, 1986). U neformalnim okruženjima kognitivno i afektivno učenje su povezani i mogu se nadograđivati. Na sličan su način povezani obrazovanje i uživanje (Bitgood, Serrell i Thompson, 1994). Vrlo osobna priroda učenja u muzejima, kratko vrijeme u kojem su učenici uključeni u to specifično iskustvo, ali i individualni kontekst u kojem se ono pojavljuje čini besmislenim pokušaj da se učenje u muzeju mjeri na isti način kao i učenje u učionici.

### ***Priroda učenja***

U razmatranju procjena učenja moramo također uzeti u obzir prirodu samog učenja. Konstruktivna paradigma učenja opisuje učenje kao razvojni proces koji uključuje ugradnju novih iskustava u prethodna razumijevanja i stavove. Naše konstrukcije života uvjetovane su i potisnute našim iskustvom, a to znači da je (budući da svi imamo različita iskustva) vjerojatno da ćemo svi imati različite percepcije o idejama, akcijama, ponašanjima, nesrećama, zadacima, osjećajima itd. ( Bentley i Vots, 1994, str. 8).

Nadalje, prepoznato je da učenje uključuje stvaranje veza između iskustava iz svih izvora. Stoga nije moguće determinirati koji je aspekt posjetiteljeva razumijevanja

određene ideje rezultat samog muzejskog iskustva. Učenje je kontinuirani proces, mi uzimamo informacije putem naših osjetila i interpretiramo ih – one rastu, a to se rijetko događa odmah. Što smo više iskustva imali, to je više informacija dostupno da se njima zabavljamo i kreiramo nove ideje.

### **Alternativna perspektiva**

U okruženju u kojem učenici stvaraju svoje vlastito značenje iz doživljenog: *važni problemi koji su uključeni u razumijevanje učenja izvučeni su prije iz analiziranja akcije onoga koji uči nego iz prirode subjekta koji se uči, zapravo, uvjeti koji potiču učenje su takvi da ako ih povećamo, ne možemo predvidjeti što će biti naučeno, ne možemo predvidjeti koje će značenje učenici stvoriti od iskustva koje smo im dali* (Hein, 1995, str.191).

Sugerira se zahtjev „muzej kao učitelj“ ili „muzej kao mjesto za učenje“ (Hein, 1995). Iz konstruktivističke perspektive ne postoji nužna veza između prilika za učenje i učenja. I povećavanje uvjeta za učenje znači da ipak ne možemo predvidjeti što će biti naučeno: *postoji cijeli drugačiji svijet učenja koji se događa u muzejima, učenje koje je izgrađeno od posjetitelja, od njihovih iskustava i ne nužno povezano s našim učiteljskim trudom. Da bismo razumjeli posjetitelje muzeja i saznali što su oni naučili, moramo imati širok pristup procjeni muzeja koji uključuje bogato spajanje kvalitativnog naturalističkog istraživanja u muzejskom području* (Hein, 1995, str. 201).

Učenje u muzejima uključuje razvoj razumijevanja koncepata s pomoću gledanja odnosa, veza i uzroka uključujući slučajne ideje i prijašnja iskustva (Lukas, 1993).

Učenje u neformalnim okruženjima nije direktno, istraživačko, dobrovoljno i osobno. Dakle, korisnije je gledati kako učenici uče nego što su naučili. Kako bismo istražili specifičnost učenja za vrijeme posjeta muzeju, vrednije je sagledati proces koji pokazuje da se učenje odvija.

### **Indikatori angažmana u procesima učenja**

U literaturi koja razmatra tragove indikatora u procesu učenja, ti indikatori su uglavnom opisani kao ponašanja koja se pojavljuju u pozitivnim okruženjima za učenje.

Nekoliko istraživača promatralo je ponašanje u muzejima koje može poduprijeti učenje. U sintezi te literature (Borun i sur., 1996) nabraja se niz ponašanja vezanih uz učenje, što može biti korišteno kao koristan indikator procesa učenja: *postavljanje pitanja i davanje odgovora, razgovor o izložbi, fokusiranje na određen dio izložbe, čitanje teksta koji opisuje artefakt, uključivanje u razne aktivnosti, pa čak i samo promatranje eksponata* (Borun i surad.,1996, str. 135).

Ovi opisi ponašanja vrlo su slični komponentama istinskog motiviranja muzejskog doživljaja, a to su: znatiželja, povjerenje, izazov, kontrola, izvođenje i komunikacija (Perry, 1993) .

Opisivana su i razmatranja (Linn i Leatsch, 1976) koja su više orijentirana prema zadatku, i koja ukazuju na pozitivne uvjete za učenje uključujući: promatranje koliko su dugo studenti proveli s materijalima, je li njihov doživljaj potpun, kojim redoslijedom izvode svoje aktivnosti, odlaze li i vraćaju li se, pričaju li s drugim posjetiteljima.



Fosterovo istraživanje koristi se kombinacijom indikatora procesa i orijentiranošću prema zadatku: vrijeme za zadatak, izvršenje zadatka i verbalna tečnost značajni su prediktori uspjeha u učenju (Koran i sur. 1996, str.6).

Drugi pisci izvan područja učenja u muzejima opisivali su povoljna okruženja za učenje (Bentley i Wotts, 1994, str.16). Oni opisuju 7 pokazatelja aktivnog učenja:

- iniciranje vlastitih aktivnosti i uzimanje odgovornosti za vlastito učenje
- donošenje odluka i rješavanje problema
- prijenos vještina iz jednog konteksta u drugi
- individualni rad i rad u skupinama
- pokazivanje vlastitog razumijevanja i kompetencije na brojne različite načine
- potaknuti samovrednovanje
- dobro se osjećati – biti zadovoljan sobom kao učenicom

Učenici uspješno uče i kada:

- ponude vlastite ideje
- podupru te poglede s dokazima
- slušaju i uvažavaju tuđe ideje
- traže pojašnjenje putem iskušavanja, izazova ili istraživanja tuđih stavova
- proširuju, modificiraju ili mijenjaju vlastite poglede kada se pojave dokazi koji sugeriraju potrebu za tim
- postavljaju pitanja o stvarima koje su komplicirane
- postavljaju daljnja pitanja koja sugeriraju razvitak važnih ideja i stavova
- imaju ideje koje im pomažu u istrazi
- smišljaju vlastita istraživanja
- traže uzroke, sličnosti i razlike koje mogu postojati u opažanjima
- prepoznaju ideje sadržane prije i poslije zadanih tema
- daju razloge za promjenu gledišta ili za ustrajanje na određenom gledištu
- istražuju temu i izvan konteksta školskog programa
- razumiju važne ideje o svijetu (Faire i Cosgrove, 1988, str.28).

Harlen u poglavlju o indikatorima samorazvitka učitelja u knjizi „Učenje o znanosti“ (Harlen, 1992) daje popis sljedećih aktivnosti kod djece kao temelj za stvaranje suda o učenju:

- u kojoj mjeri djeca provode vrijeme na zadatku međusobno razgovarajući o svom poslu
- u kojoj su mjeri zaokupljena svojim poslom, doživljavaju ga važnim za sebe
- u kojoj mjeri razumiju ono što rade, dakle ne samo da prate druge
- u kojoj je mjeri njihov rad na odgovarajućoj razini tako da se njihove ideje mogu koristiti i razumjeti
- u kojoj mjeri djeca rukuju materijalom i istražuju ga kako bi odgovorila na svoja pitanja
- u kojoj se mjeri služe razmišljanjem i manipulativnim vještinama na efektivan način za unapređenje svojih ideja.

Označene sličnosti postoje između navedenih popisa čimbenika koji bi mogli biti stopljeni u koristan skup indikatora. Prije nego što se to učini, potrebno je ukratko obraditi još nekoliko drugih polja. Važno je razumijevanje obiteljskog, grupnog ponašanja kada se u muzeju ukazuje na važnost socijalne interakcije. Ono što dijete može učiniti kad mu netko pomaže (asistira) može biti čak i veći indikativni pokazatelj učenja nego ono što dijete može učiniti samo (Vygotsky, 1978).

## **Istraživanje**

Polazeći od navedenih postavki i teorijskih razmatranja o učenju u muzeju kao neformalnom i poticajnom okruženju za učenje provedeno je istraživanje među studentima Filozofskog fakulteta u Splitu u siječnju 2010. godine. Istraživanjem se željelo utvrditi kakvi su stavovi studenata o učenju u muzeju i smatraju li ga važnim i učinkovitim za djecu. U istraživanju je sudjelovalo 380 studenata, od toga 140 muškaraca i 240 žena u dobi između 19. i 23. godine.

Cilj istraživanja je:

- ispitati mišljenja studenata o učenju u muzeju i njegovoj važnosti
- ispitati mišljenja o tome hoće li se ranim vođenjem djece u muzej stvoriti i kasnija navika samostalnog posjećivanja muzeja
- ispitati mišljenja studenata o tome stvara li se posjećivanjem muzeja afinitet prema likovnoj umjetnosti.

## **Metodologija istraživanja**

### ***Uzorak ispitanika i prikupljanje informacija***

Istraživanje je provedeno među studentima Filozofskog fakulteta i obuhvatilo je sve studijske grupe. Ukupan broj ispitanika bio je 382, od toga 142 muškarca i 240 žena. Uzorak je izračunat na temelju Blalockove formule (Blalock, Blaloch, 1968) u kojoj je pogreška odabira od 1% s razinom pouzdanosti od 99%.

Valjano ispunjen upitnik predalo je 380 studenata.

Prikupljanje informacija izvršeno je putem za tu svrhu posebno konstruiranog anonimnog upitnika zatvorenog tipa, koji je sadržavao operacionalizirane relativne indikatore i varijable predmeta istraživanja. U upitniku su korištene ljestvice procjene, u ovom slučaju Likertova ljestvica, pitanja su bila dihotomnog tipa i pitanja višestrukog izbora. Prigodom provođenja anketiranja studentima je uz svako pitanje dano dodatno objašnjenje. Analiza ispunjenih upitnika pokazala je da su studenti savjesno i odgovorno pristupili njihovom ispunjavanju, jer od 382 upitnika samo su dva isključena iz obrade.

### ***Obrada podataka***

Obrada podataka izvršena je u statističkom programu SPSS – 13 (Statistical package for the social sciences), a u obradi prikupljenih podataka korišteni su ovi statistički postupci:

1. Frekvencije i postotci
2. Hi-kvadrat test
3. Spearmanova rang korelacija

## Rezultati i rasprava

### Tablica 1.

Ispitanici različitog spola statistički se značajno razlikuju po odgovorima na pitanje. Naime, ispitanice su se u visokom postotku (72 %) izjasnile da je učenje u muzeju učinkovito za djecu, dok je kod muških ispitanika taj postotak znatno niži (55%). Negativan odgovor na to pitanje dalo je 13% žena, 15 % muškaraca, dok je odgovor ne znam dalo 15% žena i 30% muškaraca. Iz toga je razvidno da žene daleko više daju važnost učenju u muzeju nego muškarci.

### Tablica 2.

Iz tablice 2. je vidljivo da se ispitanici (ženski i muški) statistički značajno razlikuju u procjeni. Ispitanice su se u visokom postotku (60%) izjasnile za to da je učenje u muzeju učinkovito za djecu, dok je kod muških ispitanika taj postotak znatno niži (49%). Negativan odgovor na to pitanje dalo je 23% žena, 37% muškaraca, dok je odgovor ne znam dalo 17% žena i 14% muškaraca. I u ovom pitanju pokazalo se da žene učenju u muzeju pridaju veću važnost nego muškarci.

### Tablica 3.

Iz tablice 3. vidi se da spol ispitanika nije značajno utjecao na njihova mišljenja, jer je značajnost na razini višoj od 0,10. Pozitivan odgovor na to pitanje dalo je 66% žena i 58% muškaraca. Negativan odgovor dalo je 16% žena i 22% muškaraca, dok je odgovor ne znam zaokružilo 18% žena i 21% muškaraca. Dakle, ukupno prevladava mišljenje da će rano vođenje djece u muzej razviti naviku kasnijeg posjećivanja muzeja.

### Tablica 4.

Iz tablice 4. vidljivo je da se ni u ovom pitanju nisu pokazale razlike između ispitanika, jer je značajnost na razini višoj od 0,10. Kod tog pitanja 56% žena dalo je potvrđan odgovor i 48% muškaraca, pa su razlike značajno manje, što se također vidi iz rezultata Hi-kvadrata. Odgovor NE dalo je kod ovog pitanja 24% žena i 31% muškaraca, dok je odgovor ne znam dalo 20% žena i 21% muškaraca. Ovdje su rezultati daleko koherentniji, što se jasno vidi i iz izračuna Hi-kvadrata. Ukupno gledano i muški i ženski ispitanici u natpolovičnoj većini (53%) smatraju da će učenje u muzeju kod djece razviti afinitet prema likovnoj umjetnosti.

### Tablica 5.

Ovo pitanje imalo je cilj utvrditi kako studenti rangiraju razinu važnosti posjećivanja muzeja. Rang 1 u ovom slučaju predstavlja najnižu razinu važnosti, dok rang 5

predstavlja najvišu razinu važnosti. Kod tog pitanja uočena je umjerena značajnost razlika među ispitanicima muškog i ženskog spola, na razini od 0,05, što pokazuje Hi-kvadrat.

U tablici 5 rang 1. znači potpuno negiranje važnosti posjećivanja muzeja, za što se odlučilo samo 1% i muških i ženskih ispitanika. Za Rang 2. odlučilo se 9% žena i 16% muškaraca, dok se za rang 3. odlučilo 31% žena i 33% muškaraca. Za rang 4., koji označava visoku važnost, odlučilo se 25% žena i 26% muškaraca, a za rang 5. odlučilo se 34% žena i 24% muškaraca.

Kada se zbroje ukupni rezultati, čak 55% studenata odlučilo se za 4. i 5. rang, što govori o tome da je svijest o važnosti učenja u muzeju potpuno prisutna kod studenata. Ako se tome pribroji i 32% posto koji su studenti dodijelili rang 3., koji predstavlja umjerenu važnost učenja u muzeju, može se sa sigurnošću utvrditi da studenti takav način učenja smatraju učinkovitim, a time i potrebnim u odgoju i obrazovanju djece.

## **Zaključak**

Muzeji kao neformalna okruženja za učenje svakako mogu doprinijeti kvalitetnijem učenju i obrazovanju pojedinca uopće. Iako učenje u muzeju ima svoja ograničenja, kao što ih uostalom ima i učionička nastava, svakako ima i prednosti, a to je učenje putem doživljaja, te osobito zornost kao temeljni didaktički princip. Unatoč prednostima takav oblik učenja ne koristi se dovoljno u našem sustavu obrazovanja. Premda se posjeti muzejima prakticiraju na svim razinama obrazovanja, oni se kao oblik izvanučioničke nastave koriste rijetko i sporadično. Međutim, ovo istraživanje provedeno među studentima i dobiveni rezultati trebali bi aktualizirati temu poticanja sveobuhvatnije suradnje muzeja i odgojno-obrazovnih ustanova, od vrtića do visokoškolskih ustanova.

Istraživanja o toj temi trebala bi se nastaviti, a sljedeći bi korak bio saznati mišljenja učitelja, a svakako bi ga bilo zanimljivo provesti i među učenicima. Tada bismo imali cjelovitu sliku koja se zapravo već sada naslućuje, a ide u smjeru djelomičnog preusmjerenja nastave iz učionica u nova poticajna okruženja, kao što je muzej.