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Evaluation of Student's Attitude Toward Science in Indonesia

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Abstract

Purpose: Attitude is expression or response of students regarding learning. Attitudes in the form of expressions of like, dislike or rejecting an object. The purpose of this research is to describe the attitudes of students towards the three attitude indicators at middle school in Jambi Province Indonesia. **Research Methods:** Type of research is survey research. The research instrument was in the form of a questionnaire consisting of three indicators with 27 statements and also interviews. The number of students in research samples is 2,815 which are middle school students in Jambi Province, Indonesia Regency. **Results:** The results of research on three dominant attitude indicators are in the good category. Adoption of scientific attitudes shows a good category with a percentage of 58.4%. The pleasure of learning science is categorized as good with a percentage of 66.3%. Whereas a career in science is categorized as sufficient with a percentage of 41.8%.

Keywords: attitudes, science, middle school, Jambi Province.

1. Introduction

According to RI Law No. 20 of 2003, middle School is one of the basic education levels. At the junior high school level there are several subjects that are integrated from the disciplines of the branches of natural and social sciences. One of them is science subjects, science in junior high school are an integration of the natural sciences or science in them. Doyan, Taufik and Anjani (2018) state that “natural science or science is a collection of allied sciences that try to explain every phenomenon that occurs in nature”. Generally science lessons in junior high school are taught by a science teacher. Science teachers are responsible for the continuity of learning and teaching activities and measuring student attitudes. Through student participation, professional learning facilitators are in secondary schools (Pringle, Mesa & Hayes, 2017).

Evaluation of learning and teaching processes of science in each class can be measured by attitudes towards science. The attitude is an important, because the teacher can know each student responds to science learning with an indication that students reject or accept science learning. In school, the word “attitude” more often refers to academic field of students (Ali, Iqbal & Saeed Akhtar, 2013). Attitudes are interpreted as an ability to give an assessment of something, which brings itself according to judgment and is reflected in attitude of accepting, rejecting, or ignoring (Dimiyati & Mudjiono, 2006). Students' attitudes toward science learning in heterogeneous groups are not influenced by different backgrounds and cultures (Narmadha & Chamundeswari, 2013). Liaghatdar, Soltani and Abedi (2011) consider attitude toward science as

important, because attitudes can influence the achievements and performance of students very well.

Pamungkas, Subali & Lunuwih (2017) consider that natural science education is an effort or process to give knowledge to students about the nature of science. Science has been introduced from basic education, science is a learning process and continues (Narmadha & Chamundeswari, 2013). In middle school, first students consider science as the difficult subject. Science education researchers have initiated the argument that students still find it difficult to learn science concepts (Topcu & Sahin-Pekmez, 2009). Student's attitude towards science is seen from how they respond to science lessons. In general, attitudes towards science are divided into negative and positive attitudes. Students' positive attitudes in learning are characterized by being more diligent in learning so that they get satisfactory results (Rijal & Bachtiar, 2015). Negative attitude is an attitude that inhibits student learning activities, according to Nursa'adah (2014). The causes of students' negative views and attitude toward teaching of science because the traditional methods of teaching science which are used continuously, for example, learning takes place passively, and students are reluctant to think, and accept delivered material. Therefore from this explanation, the purpose of science learning is to foster a positive attitude toward students in science (Sofiani et al., 2017). Attitudes toward science measured in this research were seen through three indicators adopted from Fraser (1981), namely adoption of scientific attitudes, enjoyment in learning science, and career interest in science.

The scientific attitude in science has been taught early through the discovery of existing concepts. Parents often link scientific concepts to familiar examples (although sometimes inaccurately) and discuss complex scientific ideas (Alexander, Johnson & Kelley, 2012). Science is not lesson that focuses on theoretical explanations because it is likely that will be many differences in opinion according to individual observations that require direct practice. Science is one of lessons aimed at developing knowledge and doing, so that students able to gain in-depth understanding of the environment, one of the functions and objectives of science learning is that students gain experience as the application of scientific methods through experiments so students can be trained in scientific attitude (Istikomah, Hendratto & Bambang, 2010). Lee (2018) states that perception or misperception about science mediates the relationship between knowledge and attitudes (scientific knowledge → perceptions of science → attitudes of science). Scientific attitude is one indicator of the positive attitudes towards science in students. Attitudes towards science and scientific attitudes are two inseparable elements. Synergy from the development of scientific attitudes can realize for student the ability to gain scientific knowledge about science in life. So it is important to look at the level of scientific attitudes and the attitude of teaching science for teachers to guide the scientific talent of each student (Erdogan, 2017). Lacap (2015) states that "scientific attitude plays a major role in students pursuing science education".

Enjoyment in learning is emotion of expression of students intrinsically linked to student motivation to understand, with learning and school performance at school (Manasia, 2015). The pleasure of learning science can be defined that every student who has positive attitude in science must feel and have the comfort and pleasure to learn science. "Students assess their 'pleasure' from activities (hate, dislike, indifference, love), while the teacher assesses the 'usefulness' of each activity" (Maharaj-Sharma & Sharma, 2017), so that student enjoyment during the science learning process is seen from students responding to the learning, in general, and the indicators of pleasure in learning science are expressed with pleasure or not pleasure and like or dislike. A happy or like attitude of each student will deduce the pleasure of students towards science, while the attitude of displeasure or dislike will conclude students to displeasure with science. The students' enjoy attitude in science can be shown how students are open and enthusiastic about science subjects inside or outside the classroom, which express students' sincere interest in learning and doing science assignments.

The skills to make decisions in a career are important for every student because

students are required to have maturity in their career choices (Zamroni, 2016). Career interest in science can be defined that every student in the future has an interest in a career or continuing his education in the field of science. An interest in a career in science is an important task for every parent to support. Halim et al. (2017) state that the positive perceptions and values of parents toward the subject of science propel parents to cultivate their children's interest in science and science-related careers. Encouraging students to pursue a career or continue their studies of science is very important now. Natural sciences is very important in everyday life to meet human needs in solving problems and the application of science is done wisely to maintain environmental sustainability (Rohmawati, 2012).

The purpose of the study was to find out how is the attitude of junior high school students to the science subjects and how was effective the three indicators to be able to improve students' attitudes towards science in junior high school in Jambi province. In this study the research questions are the following:

- (1) How are student attitudes viewed from the adoption of scientific attitudes?
- (2) What is the student's attitude towards pleasure in learning science?
- (3) How is the attitude of students in their interest in a career in science?
- (4) What are the obstacles to the adoption of scientific attitudes, pleasure in learning science and the interest in a career in the field of science?

The results of this study can also contribute to further research for the schools that we studied so that teachers in the schools are able to improve students' attitudes in learning science.

2. Research methodology

This study uses survey research. Survey research examines large populations by selecting and reviewing selected samples from the population (Kerlinger, 2014). According to Creswell (2017) "from this sample, researchers generalize or make claims about that population". This research was conducted in Jambi Province. The implementation of this research was conducted in April-May 2018. The research subjects were all seventh and eighth-grade students at the junior high school level in Jambi Province. This study uses a total sampling technique. The total number of junior high school students studied was 2,815 students, consisting of 1,255 male students and 1,560 female students. Data collection is done through the provision of research instruments in the form of questionnaires. This questionnaire has 27 statement of attitude, which is divided into 14 positive statements and 13 negative statements. The dimensions of student attitudes towards the science subjects studied are based on predetermined indicators, namely adoption of scientific attitudes, enjoyment of science lessons, and interest in a career in science/career science (career interest in science). The attitude of students towards science subjects in the study was measured using a Likert scale. This questionnaire data are given to students of class VII and VIII SMP in Jambi Province Indonesia. This research data are in the form of quantitative data and analyzed using descriptive statistics. The results of the questionnaire data are processed using SPSS software or applications. This processing aims to see the attitudes of junior high school students towards science in Jambi Province Indonesia based on predetermined attitude indicators.

3. Results

The use of attitude scale was in order to see student attitudes toward certain objects, and the results of attitude categories include reject (negative), support (positive), and neutral (Sudjana, 2012). The results of this data were obtained from the distribution of research questionnaires on students' attitudes towards science in junior high school students in grades 7

and 8 in Jambi Province, total of 2,815 students (1,560 female students and 1,255 male students). The results of the attitude questionnaire data displayed in the data analysis consisted of 2 parts of the assessment. The first is an interval based assessment that has the following attitude categories: very bad, bad, enough, good, very good. Assessment of this attitude category is based on the frequency and percentage of all students who choose each attitude category. The second is based on the attitude scale, and the attitude scale used is the Likert scale which consists of 5 different ratings. This attitude scale consists of 5 ratings (1 = very bad, 2 = bad, 3 = enough, 4 = good, 5 = very good). This assessment is based on the number of all students who choose each attitude scale and produce mean, mode, median, and standard deviation. Both of these attitude assessments were obtained using descriptive statistical analysis of SPSS data processing software.

The results of the research data shown below are based on three indicators of attitude, namely adoption of scientific attitudes, enjoyment of science lessons, and career interest in science (career interest in science). The results of questionnaire data are based on these indicators.

3.1 Adoption of scientific attitudes

The following is the result of descriptive data analysis using SPSS from questionnaire data on student attitudes towards science based on the Adoption of Scientific Attitudes indicator, and it can be seen from the questionnaire results table below.

Table 1. Adoption of scientific attitude

Rate	Classification		%	Standard deviation	Mean	Mode	Median	Min	Max
	Attitudes	Amount							
7.0-12.6	Very bad	0	0						
12.7-18.2	Bad	90	3.2						
18.3-23.8	Enough	1080	38.4	0.691	3.64	4.0	4.0	2	5
23.9-29.4	Good	1386	49.2						
29.5-35.0	Very good	259	9.2						

From the table above, student attitudes towards science are based on indicators of adoption of scientific attitudes in junior high schools, and the results of the data show that: the categories of student attitudes are very bad as much as 0% (no voters), students categorized as bad as 3.2% (90 out of 2,815 students), students with enough categories as much as 38.4% (1,080 of 2,815 students), students with good categories as much as 49.2% (1,386 of 2,815 students), and students with very good attitude as much as 9.2% (259 out of 2,815 students). Whereas based on the scale of the attitude shows the data obtained is the mean value of 3.64, mode is 4, besides that from the data analysis the standard deviation value (0.691) is smaller (<) than the mean (3.64). The mean is a representation of all research data samples or shows valid research data. These results indicate that students’ attitudes towards science on the indicator of scientific attitude adoption, students have a positive attitude and it is in the good category. This is supported by the results of the above data which shows that 49.2% of students, or 1,386 students from 2,815 total students, are in a good range and supported by the mode value or the dominant attitude scale chosen is 4 “good”.

3.2 Enjoyment of science lessons

The following is the result of descriptive data analysis of students’ attitudes towards science based on indicators of learning pleasure in science, and it can be seen from the table below.

Table 2. Enjoyment in learning science

Rate	Classifications		%	Standard deviation	Mean	Mode	Median	Min	Max
	attitudes	Amount							
10.0-18.0	Very bad	8	0.3						
18.1-26.0	Bad	106	3.8						
26.1-34.0	Enough	835	29.7	0.78453	3.8014	4.0	4.0	1	5
34.1-42.0	Good	1354	48.1						
42.1-35.0	Very good	512	18.2						

From the table above, the results of the assessment of students' attitudes towards science based on the indicators of Enjoyment of science lessons, show the following: the categories of student attitudes are very poor as much as 0.3% (8 of 2,815 students), 3.8% is in bad categories (106 of 2,815 students), students with enough categories as much as 29.7% (835 out of 2,815 students), students with good categories as much as 48.1% (1,354 out of 2,815 students), and students who have very good attitudes as much as 18.2% (512 of 2,815 students). While based on the scale of the attitude of the results, the data obtained show that the mean value is 3.8044, and the mode is 4. In addition, the standard deviation value (0.78453) is smaller (<) than the mean (3.8044), this means that the mean value is a representation of all sample data studied or shows valid research data. These results indicate students' attitudes towards science on indicators of pleasure in learning in science showed a positive attitude to science and viewed from the results of data analysis that 48.1% of students, or 1,354 of a total of 2,815 students, were in a good category. This is also supported on the results of the attitude scale on the questionnaire that is most chosen by students is scale 4 which is "good".

3.3 Career interest in science

The results of the descriptive analysis of student attitudes towards science based on indicators of leisure interest in science can be seen from the results table below.

Table 3. Career interest in science

Renting	Classification		%	Standard deviation	Mean	Mode	Median	Min	Max
	attitudes	amount							
10.0-18.0	Very bad	10	0.4						
18.01-26.0	Bad	147	5.2						
26.01-34.0	Enough	1176	41.8	0.77196	3.6	3.0	4.0	1	5
34.01-42.0	Good	1164	41.3						
42.01-35.0	Very good	318	11.3						

Based on the results of data analysis, it can be explained that the table above shows the results of the assessment of students' attitudes towards science based on indicators of career interest in the field of science, with the results of the data show that students' attitude categories are not as good as 0.4% (10 of 2,815 students), students with a bad category as much as 5.2% (147 out of 2,815 students), students with enough categories as much as 41.8% (1,176 out of 2,815 students), students with good categories as much as 41.3% (1,164 of 2,815 students), and students with very good attitude as much as 11.3% (318 out of 2,815 students). While based on the scale of attitude from the results of the data above shows the data obtained is a mean value of 3.6 and mode is 3. In addition, the value of the standard deviation (0.77196) is smaller (<) than the mean

(3.6), so the conclusion is that the mean value obtained is a representation of all sample data studied or shows that the research data is valid.

The results of questionnaire data on indicators of interest in a career in the field of science show the findings of several obstacles that lead to negative attitudes towards students. This is indicated by the attitude of students who are categorized enough (41.8%) to have a greater value than the good category (1.34%) or very good (6.9%). Besides that it is supported by questionnaire data based on attitude scale, the most scale is chosen by respondents or the mode value is 3 or “sufficient”, and has a mean value of 3.4451 which means that the average student answers enough.

3.4 Obstacles to student attitudes

The results of the measurement of 2,815 students were taken through a questionnaire. The three attitudinal indicators measured are elaborated by 27 statements, but there are still students with negative attitudes as evidenced by their disapproval of the statements given, as it is shown in the table below.

Table 4. Obstacles to student attitudes

Indicator	Obstacles
Adoption of scientific attitudes	3.2 %
Fun in learning science	4.1 %
A career interest in science	5.6 %

Based on the table above there are still obstacles to the three measured attitude indicators. These results indicate that the indicator of the adoption of scientific attitudes constraints is 3.2% (90 out of 2,815 students). The pleasure indicators in science learning show obstacle values of 4.2% (114 of 2,815 students). Whereas the indicators of interest or interest in a career in the field of science show an obstacle value of 5.6% (157 out of 2,815 students). From these results, it can be seen that the biggest obstacle is the indicator of career interest in the field of science.

4. Discussion

Facts show that the attitude of students is one of the key factors in learning science (Liaghatdar, Soltani & Abedi, 2011). An attitude is a form of expression or student response to learning objects. Attitudes such as expressions of likes or dislike, or reject or accept an object. Attitude measurement is done to see the individual’s ability to object. In this study, researchers measured students’ attitudes towards science as an object. The attitude “towards science” is used to indicate that individual feels and thinks about science (Sethi, 2015). The essence of attitudinal measurement is useful for knowing students’ feelings during the science learning process in the form of both positive attitudes and negative attitudes, and the expectation that each student’s attitude towards science is a positive attitude. Because, if students have a positive attitude towards science, it will affect abilities related to the field of science (Usta & Akkanat, 2015). Desele (2005) states that “the attitude scale usually consists of a collection of statements or “items” that measure the respondent’s level of agreement, likes, or other similar perceptions”. Measurements about student attitudes towards science have focused on what attitudes are to be measured. In this study, there are three dimensions of attitude measurement carried out, namely the adoption of scientific attitudes, pleasure in learning science and interest in increasing hours of science lessons.

4.1 Adoption scientific attitude

Adoption of scientific attitudes is used to see one's willingness to assess and revise opinions based on experiments and empirical data (Farenga & Joyce, 2010). In Table 1 reveals that the attitude of students based on scientific attitude adoption has a good category with mean 3.64 and mode 4. From the results of the mean and mode, it reveals that student attitudes toward the indicator of adoption of dominant scientific attitudes are categorized as good. Furthermore, it is also supported from the results of data analysis in Table 1 which shows that 49.3% or 1,386 of 2,815 students are in the good category and 9.2% or 259 out of 2,815 students fall into the very good category. This is supported by the results of the interview below:

Question: Do you like differences of opinion in the process of learning science? If yes, why and if not why?

Answer: Yes, I like differences of opinion, because from different opinions I can consider which opinions are the best in science learning.

From the results of interviews, the attitudes of the dominant students are good, meaning students are willing to seek their own learning experience. Adoption of attitudes will be high if the learning process uses the inquiry method (Wolf & Freser, 2007). So that it can be concluded that the indicator of scientific attitude adoption in this study shows that students' attitudes are more dominant in good categories and show students' positive attitudes toward science are in a good category. Good attitude categories from the results of data analysis are also supported by the main factors, first students have the attitude of reading pleasure towards new things even though those that do not fit their thinking. In this line, Akpinar et al. (2009) states a more positive attitude towards science is related to a positive attitude about the usefulness of science.

4.2 Enjoyment in science lesson

Enjoyment is considered as an emotional variable and an important concept in learning, because it describes the problem of education to students (Mohammad-Davoudi & Parpouchi, 2016). Enjoyment of learning in science explains the students' responses to science lessons, which are shown by the students' enjoyment of the science lesson and how strong is the students' desire to learn. From the results of observation, it shows in Table 2 the indicators of pleasure in learning science in general from the explanation of results of the dominant questionnaire data towards a positive attitude with a good category, and the mean value is 3.8. Supported also from the results of interviews conducted that students' attitudes towards SAINTS were dominant. This can be seen from the results of the interview below:

Question: Do you like science lessons in school?

Answer: Yes, I like science

Question: Why do you like science lessons?

Answer: Because science is natural science and I want to learn about natural phenomena that occur. But I don't like learning science related to calculations and formulas.

The results of the interviews conducted showed the students' attitudes towards the science subject in good categories. That is, students assume that science is one of the fun lessons. This positive attitude is proven that the average student who agrees that the science lesson is fun and is also one of the most interesting subjects. One example of student pleasure in science is that students are motivated to seek more knowledge in the field of science. Enjoyment is considered the mechanism that encourages the concentration of learners, helps the learning process, and builds the learning environment (Lucardie, 2014).

4.3 Career interest in science

Interest in learning science triggers and maintains an effective component in the form of pleasure that is aligned between cognitive in class, integration, and enhancing science learning experiences (Jack & Lin, 2018). So it can be concluded that interest or interest in a career in the field of science has a significant influence on the growth of a positive attitude. Furthermore, Table 3 shows the results of indicators of career interest in the field of science whose results are quite good which is indicated by the results of mean 3.4451 and mode 3. Based on the results of the mean and mode it concluded that student attitudes tend to be negative. This is also supported by the results of Table 3 showing the figure of 41.8% or 1,176 of the 2,815 students in the sufficient category. The attitude of students shows a high enough category, so that concludes the negative attitude of students. This high number is supported also based on the results of data of students who have a bad attitude and are not very good with a number of 5.6%. The reason is that students assume that science is a difficult lesson, which causes their low interest in a career or continuing studies in science. Reinforced by Astuti, Sunarno & Sudarisman (2012), it is stated that “studying science in school is still a difficult lesson for some Indonesian students. The assumption that learning science is difficult, can only be done by smart students, and boring is so strongly attached to the minds of many children”. Besides that it is supported by the results of interviews below:

Question: What is your response if you become a science scientist in the future?

Answer: I am quite happy to learn about SCIENCE, but I am lacking in faith or disagree if I later become a science scientist (SAINS).

Question: Do you want to become a science teacher after graduating?

Answer: yes, I think being a teacher of SAINS is quite interesting to do even though science lessons are quite difficult for me.

The results of the interview concluded that students were reluctant to pursue careers to become science scientists, and there was interest in students being science educators even though students thought science lessons as a difficult lesson. This result can be caused by students' interest that is different from one student to another. Furthermore, it is the task of educators to change new methods in science teaching in increasing students' positive attitudes towards career interests in science.

4.4 Obstacles to student attitudes

Overall results of the study showed a positive attitude towards the adoption of scientific attitudes, the pleasure of learning science, and an interest in a career in science. Although showing positive attitudes there are still some obstacles. Constraints on the indicator of the adoption of scientific attitudes are shown from the analysis of the results of Table 1 data, and the results of the data show 3.2% or 90 students who show negative attitudes. The reason is that students on the indicator of scientific attitude adoption have problems, if students are not interested in exploring more understanding of science around them. To increase student interest needed more students to have a nonchalant nature about the things he/she just got about science. This is expressed by being neutral and rejecting (negative) things that students get in science. This factor causes low student innovation when studying science.

Table 4 shows that the 4.1% or 114 out of 2815 students showed their dissatisfaction in science learning. The figure concludes the number of students who show negative attitudes toward the indicator of pleasure in learning science. The main factors are student displeasures when learning science, based on student learning experiences. The pleasure of learning science is related to student experience (Joyce & Farenga, 2010). It was proven that from a number of these students disagreed about the discourse of adding the allocation of learning to science in the classroom, and

students were not happy to wait for science lessons in the study hours, because students tended to think that science was a less interesting and boring lesson. The results of the study by Manasia (2015) show that “school is a bad period in their lives, and prevent them from doing more interesting things”. So that educators need solutions to increase happy interest when learning science to students. Farenga & Joyce (2010) state that in order “to encourage pleasure in science lessons, educators should ensure that students see science interesting through direct research-based activities”.

The indicator of interest in a career in science is an indicator of the highest percentage of obstacles, namely 5.6% or 157 students being negative. Jocz et al. (2014) state that recent research revealed that students’ interest in science in schools showed a decline. Factors of high numbers are constraints on the interest in a career in science because students still have a low interest in learning science. According to Najemi and Wijayanti (2014), “in order to foster interest and interest in learning science, teachers must be brave to use innovative learning models”. This school environment has an influence on the interest in a career in the field of science for each student. Furthermore, the low interest in a career in science is because students have experience in failing to learn science at school/life. The reason is that too often science instruction fails to engage students’ interests and separate students from their daily experiences (Kolodner et al., 2009).

5. Conclusions

Based on the results and discussion, it can be seen that the indicator of adoption of scientific attitudes is relatively good, the pleasure of learning science is quite good, and the interest in a career in the field of science is also quite good. Overall, students’ attitudes towards science in Jambi Province Indonesia are good. So it can be concluded that the attitude of junior high school students to science in Jambi Province Indonesia has a positive attitude. This illustrates that the acceptance of Science in the eyes of students gets a positive attention because it can optimize learning outcomes.

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Muslim Women's Views on Lifelong Learning: The Example of the Eden Girls' School of London

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Abstract

Through the research data gathered in November 2018 in Eden Girls' School of London, the role and position of women are presented in terms of time and circumstances in the Muslim community. It presents the profile of female education and its disadvantageous or advantageous position within the Islamic community and especially in education. It also presents its place in education with regard to men and consequently in the labor market and consequently in society. In this research we will try to look at the different and varied cases of the influence of Islamic law and traditions on the participation of women in education. We will see whether the principles of Islamic law are felt to be relevant and whether they affect negatively or positively the education and training of women as well as the relationship of Muslim women with lifelong learning around the world in Muslim and non-Muslim countries.

Keywords: Muslim women, lifelong education, participation, Islam, feminization, society.

1. Theoretical background

Education has always given battles with traditions, customs and culture and is trying to create some progressive reforms. The struggle of the feminist Muslim movement is enormous, arguing that the way women can enter life-long learning and the highest is the position of women in religion (Ong, 2006). For hundreds of years, women have been excluded from the Jamaica, although for them it has been a passage for social transformation, public relations and spiritual and psychic communication and integration. In the mosque, women study the scriptures and gain experience and knowledge, getting closer to their redemption and regeneration. In many cases in the mosque, men hold senior leadership positions and guide and direct the education of women based on patriarchal traditions and separate levels of education based on gender segregation (Aggarwal & Aggarwal, 1994).

Until 1990, women's education was very limited. Usually, home schooling was followed where girls and women had their own teacher or teacher and always under the supervision of an elderly person in the family. Since 1990, women's education within the mosque has become more prominent or as extra education. But not all parents with this influence agreed. Others again felt more secure to send their girls to the mosque to be educated and their reputation was protected in this way. The falsification of the scriptures, the conservative and backward ideologies and the beliefs of some communities and part of the supporters of the patriarchal,

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ecumenical society have for many decades affected the introduction and advancement of women in education. The benefits of woman’s education over the years and the influence of Western modernism have provoked and shaken the patriarchal male-dominated monopoly (Xu & Jaschok, 2009).

Women’s education at a global level is clearly starting in the 19th century. In many countries, girls or women did not belong to state education, but their education was made at home, with various teachers coming home, in monasteries or more often than girls’ mothers themselves. All this until the 18th century. Since the 19th century with the advent of enlightenment, there has been a tendency and effort to develop social progress. The various views of philosophers and researchers have reinforced the importance and necessity of integrating women’s education into the new enlightening progressive society. The indication of the necessity of women’s education was also the result of the industrial revolution and the turbulent economic changes, as well as the changes and reforms in national and political fields. Since then, there have been different fields of activity and education based on gender. That is why this refers to “raising” girls and “educating” boys.

In 1834, women were first elected and allowed to participate in state education. Nevertheless, the education of girls/women was mainly related to the role of woman in family as a husband, as a mother, or as a housekeeper. The courses were more moral and social in nature and always aimed at women being trained to contribute to their family. For this reason, for example, gymnastics lesson was replaced by sewing. In general, women were considered to be weaker in spirit (Ziogou-Karrastergiou & Dalakoura, 2006).

Although basic education and attendance at elementary school was mandatory, we observe around 1879 that 93% of the female population in many regions is illiterate, they are not literate or literate at all. The female population deals with agricultural work or is sent to wealthy families in major cities to work as maids. Instead, boys are educated in a rather satisfactory system, where they prepare them with the necessary skills and knowledge for their professional and future lives (Ziogou-Karastergiou & Dalakoura, 2006).

But with the passage of the 19th century, there is a strong action and participation of women in education, resulting in the creation of excellent scientists in all fields. Although women’s participation in education grew, inequalities persist and there is a selective process in many areas that broadens these differences. The multiple obligations of women, and especially family, continue to impede their education and training.

2. Method

2.1 *Empirical research*

In this case study the quantitative survey with questionnaire was used. Population is the entire Walthamstow Muslim community in North London, where the Eden Girls’ School Muslim School is established and operates. The sample were individuals selected by the Islamic community, randomly, mainly from school (the Islamic school of girls), a large percentage of teachers, as well as parents of pupils or relatives who wanted to participate and answer the questionnaire.

This research is interesting because our issue of women in Islamic law education is particularly sensitive. It examines and presents particular information about the position of woman in Islamic law, inside and outside the Islamic communities. With the rise of Islam, the position of the woman changes, and while, over the years, at the time of globalization and the improvement and progress of social cohesion, improvement is expected and women’s rights and status are surprised by the phases and contradictions in this piece. Islamic fundamentalism and

the insistence on maintaining a patriarchal society within the Islamic community help to maintain inequalities between men and women. On the other hand, this research shows how important it can be to increase the woman's strength by educating and training her. Also, through research, behaviors, actions, education change according to nationality, age, economic flexibility and level as well as the educational level and place of residence.

We are called upon to investigate important and essential questions such as:

- What was and is the education of women in the Islamic world?
- What is the participation of women in lifelong learning in Islamic law?
- What is the position of the woman in Islam?
- What are the reasons for women's education?
- What are the reasons for women's participation in education?

As well as more general issues such as:

- Views on the education and training of women in Islamic law.
- Qur'an and education / education of women.
- Movements and actions of various organizations, communities, governments to improve and enhance the participation of women in education.

In addition to these research questions and placements, there will certainly be new questions and information that will probably answer some of the already new searches and queries.

2.2 Explanation of measurement techniques and results

The aims of the survey are the following:

- Inspire Islamic ideology and obtain true information about the views and attitudes of Muslims about women's participation in education, training and lifelong learning.
- Understand why women are or are not involved in basic formal, non-formal or informal learning.

For our research, we use a descriptive and inductive analysis to see if participants' statements differ relative to the demographic characteristics of the individuals who participated in the survey. In the descriptive survey we will present the frequency ratios for the variable variables, while for the Likert grading variables, apart from the frequencies and the percentages and averages and the standard deviations.

Initially, in order to perform the inductive analysis, we must check whether the values of the variables follow the normal distribution to decide whether to use parametric or non-parametric criteria respectively. We do this with the Kolmogorov-Smirnov statistical criterion (Field, 2009, Howell, 2007).

The statistical criteria in the inductive analysis and statistical data we use are as follows (Green & Salkind, 2003):

- (a) If the independent variable and the dependent are categorical we used the statistical criterion χ^2 .
- (b) If the independent variable was categorical with two classes (e.g. gender), and the dependent variable, Likert grading, because the data of our variables did not follow a normal distribution, we used the non-parametric Mann-Whitney criterion.
- (c) In the case where the independent variable was categorical with more than two categories (e.g. Age) and the dependent Likert grading scale, then the non-parametric criterion Kruskal-Wallis was used for the same reason.

2.3 Results

This section attempts to describe our final sample. According to data from the statistical analysis, the sample of the 142 participants in the Islamic community for the questionnaire consists of 15-20 age group with 6.3%, 20-29 years old with 12.7%, aged 30-39 with 38.7% and 40-49 years old with 42.3%.

According to data from the statistical analysis, the sample of the 142 participants in the Islamic community consists of people of different nationality. More specifically, our sample consists of 48 people from Pakistan with 33.8%, 31 from Algeria (21.8%), 21 from India (14.8%), 20 from Africa (14.1%), 10 people from Afghanistan (7.0%), and 11 from Bangladesh (7.7%).

Our sample consists of 2 people who graduated from the primary school with a percentage of 1.4%, from 30 people who graduated from gymnasium with 21.1%, from 11 people who graduated from the college or a technical school with 7.7%, from 50 graduated from higher education with 35.2%, and finally 49 people where they completed postgraduate studies with 34.5%. From the sample of 142 Islamic community participants for the questionnaire are people with different professional status. More specifically, our sample consists of 9 pupils with 6.3%, from 18 unemployed with 14.8%, 21 from occasional employment and 65.5%, and from 93 full-time 99.3%.

Our sample consists of 7 people dealing with administration and secretarial support, with 4.9%, 2 waiters (1.4%), 1 person dealing with custody and supervision of children (0.7%), with 2 people in handling computers with 1.4%, with 2% who are involved in constructions and repairs with 1.4%, with 2 persons who are sales and customer service with 1.4%, 60 are teachers with 42.3%, with 7 persons are doctors, fibers or nurses with 4.9%, with 6 people dealing with households with percentage 4.2%, with 7 people working in municipalities or other local administrations in percentage 4.9%, with 8 people involved in business administration with a percentage of 5.6%, with two people who are still pupils/students with percentage 1.4%.

The sample consists of people with different experience and participation in a non-school training program. More specifically, our sample consists of 88 people who have not attended a 62% school-leaving program, of 53 people who have attended a 37.3% out of school program, and those who did not answer the question and we do not know the real answer.

The following is a descriptive analysis of the data, resulting from respondents’ answers. In particular, according to data from the statistical analysis of the data, it appears that from the sample of 142 participants in the Islamic community for the questionnaire the people who fully agree with question 1 and constitute the majority, that in any case the education of women is necessary to improve their standard of living, is about 56%, while it impresses that there is not one of the respondents to disagree, while about 44% neither agree nor disagree, considering that there may be issues instead of related or other areas that may affect the standard of living of women or the self-evident answer to the benefits of women’s education and training.

While there is a significant percentage of about 17.2% who fully agrees to the importance of women’s education and whether mothers can positively affect their children’s life. That education can help women manage their daily lives better, in question 8, a large percentage totally agrees and is the overwhelming majority of about 64% of the participants, while about 8.5% agree and disagree with this view, while there is a significant percentage of about 27.5% who absolutely disagrees suggesting that women do not or do not feel necessary and that education cannot help women better manage their daily lives.

In the opinion of respondents in question 9, women’s education is necessary because they create better employment conditions for them, with an average percentage agreeing totally or fairly and accounting for around 39% of the participants, while about 57% agree neither disagrees with this view, which suggests that there may be other, more important factors that affect

women's employability, such as time, family, etc., while there is a very small percentage of about 4% who disagree strongly as this is not the case or there are perhaps other important factors that affect the woman's employability, such as time, family, etc.

Women's education is necessary for the questioned audience in question 10 because it makes them more active members in their community, with a large percentage agreeing totally or quite and is about 66% of the participants, while about 28% does not agree or disagree with this view, which suggests that there may be other more important factors that make them more active members in their community, while there is a very small percentage of about 6% who absolutely disagrees suggesting that this is not the case and that education women are not needed because they make them more active members in their community.

Based on the results of the answers to question 11, women's education is necessary because they make them more active members of society, a large percentage of them agree totally or fairly and is about 70% of the participants, while about 25% agree or disagree with this view suggesting that there are perhaps other more important factors that make them more active members of society, while there is a very small percentage of about 35% who absolutely disagrees, suggesting that this is not the case and that education of women is not necessary because it makes them more active members in their community.

The lack of women's education, in the opinion of respondents, negatively affects the course of their children in society, with a large percentage totally agreeing to about 53.5% of the participants, while about 15% agree neither disagree with this view, obviously because they may have a totally different view or believe that women's lack of education may not adversely affect their children's course in society but depends on situations or conditions while there is a significant proportion of about 32.5% suggests that women's lack of education does not adversely affect their children's course in society.

Among respondents to question 13 on "My everyday life is so difficult that I do not have the luxury of thinking about women's education", a large percentage totally disagrees with about 82% of the participants and is the overwhelming majority, indicating their interest for women's participation in education, with about 11% agreeing or disagreeing with this view, obviously because they may have a totally different view, while there is a significant proportion of about 7.7% who fully agrees that the absence of their personal time or interest to the education and training of women.

Then we follow the inductive analysis of our research data to identify statistically significant differences in age. Concerning the question "You observed an out-of-school education program" seems to agree and respond positively (58.2%) to the highest percentage of people aged 30-39 compared to those aged 15-19 (44.4%) who also responded positively, with even fewer percentages in the 20-29 age group and with the lowest rate responding favorably to those aged 40-49 years, $\chi^2(1) = 19.796$, $p = .000$.

The question "The desks are for children, so the big ones do not have any work with them" seems to disagree and respond negatively (1.11) to the larger percentage of 20-29 year olds, as well as all other age categories where they also disagree, with corresponding amounts (1.49), 30-39 years (1.58), and 15-19 years (2.60), $H(3) = 11.223$, $p = .011$.

In the question "If a person wants to be successful he should constantly improve his knowledge and skills" seems to agree and respond positively (4.72) to the highest percentage of people aged 40-49 as well as all other age groups where they also agree with corresponding percentages by age, 20-29 years old (4.28), 15-19 years (4.22), and 30-39 years old (3.96), $H(3) = 41.662$, $p = .000$.

In the question "Only if the employer insists, then the employee has to take part in a training program" seems to disagree and respond negatively (2.94) to the largest proportion of 20-

29 year olds as well as all other age categories also disagree, with corresponding percentages by age, 15-19 years old (2.44), 40-49 years old (2.33), while the 30-39 age group shows neither agree nor disagree with (3.11), $H(3)=15.762$, $p = .001$.

On the question “I know my job very well and I do not need anyone to tell me what to do” seems to disagree and respond negatively (2.96), the majority of people aged 30-39 disagree with this proposal similar to the other age categories, the same category of persons 20-29 years old (2.89), while the 40-49 age group shows neither agree nor disagree with (2.43) other than the age of individuals 15-19 years where neither disagree nor agree with this proposal, with (3.0), $H(3)=9.374$, $p = .025$.

In the question “Adult education costs expensive and are not times for such” seems to agree and respond negatively (2.67), most of the 30-39 age group disagree enough with this proposal, the age group 15-19 years old also seems to disagree with (2.56) similar to another category of 20-29 year olds (2.00) who disagrees quite or altogether, contrary to the age of 40-49 years of age where it seems neither disagree nor are they consistent with this proposition, with (3.07), $H(3)=29.722$, $p = .000$.

To the question “If someone was not a good pupil, it is natural to be afraid that he will not succeed in adult education” they seem to disagree and respond negatively (1.89) to the majority of 15-19 year olds to disagree strongly with this proposal, the 20-29 age group also seems to disagree strongly with (1.44) similar to another category of 40-49 year olds (1.35) who disagree quite or completely, similar to the age group of people aged 30-39, where they seem to disagree enough with this particular case with (1.35), $H(3)=12.250$, $p = .007$.

In the question “People’s participation in adult education is a good example for their children” they seem to disagree and respond negatively (2.56), with the majority of 20-29-year-olds disagreeing with this proposal, the category of people aged 30-39 also seems to disagree quite well with (2.36) similar to another category of people 15-19 years old (2.00) who disagree quite or completely, while the age group of people from 40-49 years seems neither to disagree nor to agree with this proposal, with (1.35), $H(3)=30.242$, $p = .000$.

In the question “Women should be involved in any form of education”, the analysis is based on [K] Kruskal-Wallis and appears to disagree and respond negatively (2.83) to the majority of 20-29 years old, as well as all other age categories, where they also disagreed, with corresponding percentages by age, 15-19 years old (2.33), 30-39 years old (2.22), while people aged 15-19, responded positively and agree totally or quite with a percentage of 4.45, $H(3)=66.800$, $p = .000$.

The question “Women and men should be taught in the same way and gravity” appears to disagree and respond negatively (2.83) to the largest proportion of 20-29 year olds as well as all other age categories where they also disagree, with corresponding percentages by age, 15-19 years old (2.33), 30-39 years old (2.22), while people aged 40-49 responded positively and agree totally or quite with a rate of 4.45, $H(3)=24.644$, $p = .000$.

In the question “I find it less necessary to train and educate women” seems to disagree and respond negatively (2.11) to the largest proportion of 20-29-year-olds as well as all other age groups where they also disagree (1.89), 30-39 years old (1.51), and 40-49 year olds responded negatively and totally or quite disagree with a rate of 1.32, $H(3)=13.472$, $p = .004$.

In the question “Education and education is more important to men than to women” seems to disagree and respond negatively (2.78) to the highest percentage of 15-19 year olds as well as all other age categories also disagree with corresponding percentages by age, 30-39 years old (1.72), 20-29 years old (1.45), and also people aged 40-49, also responded negatively and disagree totally or quite with a rate of (1.08), $H(3)=19.627$, $p = .004$.

The question “Women should have equal opportunities like men” appears to be totally in agreement and responded very positively (5.0) to the largest proportion of 15-19 year olds as well as all other age categories, where also (4.94), 30-39 years (4.72), and 40-49 year olds also responded positively and agree totally or quite with 4.56, $H(3)=11.455$, $p = .010$.

The question “Men and women should be taught the same subjects/courses and in the same way” appears to be totally in agreement and responded very positively (4.89) to the highest percentage of 15-19 year olds, as well as all other age categories where they also agree totally with corresponding rates by age, 40-49 years (4.87), 20-29 years (4.56), and also those aged 30-39, also responded positively and agree totally or quite with a rate 4.42, $H(3)=23.315$, $p = .000$.

In the question “Learning helps women to be confident” seems to agree perfectly and responded very positively (4.77) to the highest percentage of 40-49 year olds as well as all other age categories where they also totally agree with (4.22), while those aged 30-39 years with (3.94) show neither agree nor disagree, as well as those aged 20-29 years old, that show neither agree nor disagree with a rate of 3.49, $H(3)=55.655$, $p = .000$.

The question “The participation of women in education is not a personal affair and should concern the whole of society” seems to fully agree and responded very positively (4.07), the highest percentage of 30-39 year olds and all other age categories with corresponding percentages per age show neither agree nor disagree, with those aged 20-29 years old (3.72), while those aged 15-19 with (3.44), as well as people aged 40-49, showing neither agree nor disagree with a rate of 3.29, $H(3)=18.654$, $p = .000$.

In the question “The lack of education of women adversely affects the course of their children in society” seems to be completely in agreement and responded very positively (4.44), the highest percentage of 15-19 years old as well as all other age categories with corresponding rates by age not agreeing or disagreeing, with those aged 40-49 years (4.22), while those aged 40-49 with (2.64) disagree quite well, as well as people aged 30-39, who seem to disagree quite or completely with a rate of 2.44 , $H(3)=47.198$, $p = .000$.

In the question “The family must motivate women to be educated” the analysis is done by the Kruskal-Wallis criterion and seems to be totally in agreement and responded very positively (4.67) to the largest proportion of 20-29 year olds as well another age category with those aged 30-39 years (4.38), while people aged 40-49 years with (3.53) seem neither to disagree nor to agree, as well as people aged 15-19 years old, showing the same as 3.0, $H(3)=39.819$, $p = .000$.

On the question “Traditions sometimes prevent women from learning” seems to be totally in agreement and responded very positively (4.68) to the highest percentage of people aged 40-49 as well as another age category with those aged 20-29 year-olds (4.56), and those aged 30-39 also seem to agree well with (4.0), and finally, it seems neither to disagree nor to agree with this proposal people aged 15-19 with a rate of 3.22, $H(3)=51.875$, $p = .000$.

The question “I’m ashamed to talk about my will to learn” seems to disagree completely and responded negatively (1.71) to the highest percentage of people aged 30-39 as well as another age category with those aged 20-29 (1.67), while they do not agree or disagree with those aged 40-49 with (3.78), as well as those aged 15-19 years with a 3.56, $H(3)=47.476$, $p = .000$.

The question “I find it unnecessary for women to be trained” seems to disagree completely and responded negatively (2.62) to the majority of 40-49-year-olds, as well as another age category. The question “The desks are for men, so women do not have any work with them” seems to disagree completely and responded negatively (1.33) to the largest proportion of 20-29-year-olds as well as another age category with people aged 30-39 years (1.25), as well as those aged 40-49 years with (1.17), while we observe that neither agree nor disagree with this proposal people aged 15-19 years with a rate of 3.11, $H(3)=20.098$, $p = .000$.

3. Discussion

The purpose of this research was to investigate the role of women, their stance, their place and their participation in education and lifelong learning in Islamic law in general. Women have tried and succeeded in overcoming the social stereotypes and conservative role they have attached and gaining a high degree of equality in education. The participants in the questionnaire, having the chance to live and grow up in a country that offers innumerable opportunities and firmly support the female sex, have to succumb to the “competition” of the labor market. This helps all faithful and faithful Islamic communities to follow and watch in “Western Steps” and developments, grab every opportunity given to education and training so that they finally succeed and reach their goal. Social and moral barriers and their identification have helped women, governments and organizations to develop plans and strategies for increased participation and positive thinking and attitudes for women’s education.

Over the years some pre-Islamic customs have found room to promote mistaken ideals for women’s education (Jawad, 1998). Outmoded customs and cultures that deny women equality and violate their rights have been established in many local Islamic communities and are therefore accepted. It should be noted that many of these species and cultures are not shown or listed in the Qur'an or other Islamic texts within it. After this research, we conclude that Islam is taken into account and is considered the religious-educational-philosophical institution or institute, which is the beginning and main reason of education in many directions, theories and promptings. Islam is helping to establish and secure the participation of women in education, in many places where they refer to the Quran, contrary to the fact that some theorists, researchers, or religious and political leaders tried and tried to alter their interpretation of women’s participation in lifelong learning and education in general. This is deduced from the answer given by the sample of research, both men and women, where they do not believe that women’s participation in education conflicts with Islamic law and ethos. As a result, women are educated and trained according to the field they choose because of the acceptance of specific moral values, principles and traditions with every right to education as it is stated in the Qur'an.

Many activists and feminists oppose the violation of women’s rights and inequalities against them and argue that extreme situations certainly do not resemble the “voice of Islam” (El Solh & Mabro, 1994: 120). Doctor Fatima Nasif (1999), a fairly respected woman, as well as a very remarkable woman, in her personal interview, states: “Yes, there are women rectors and teachers in education in my country, but decisions, important or insignificant what men take to the university” (Goodwin, 1994: 216).

The inequality of the two friends was and is a strong class against Islam, as well as the unequal opportunities between men and women in education in general. For society to progress and evolve politically, economically and socially there must be education. But if more than 50% of the Islamic society is left “unthinkable” and deprived of basic education and knowledge, it is understandable that there are economic, political, racial and social inequalities. Many scholars believe Islam is a brake on women’s education. Studies have shown that in many parts of the world such as Africa, Southeast Asia and elsewhere, women’s education is of secondary importance, something that is not the case for men. Also, Islamic women seem to be confined enough to study in the home, which makes it impossible for them to be educated, remaining at quite low levels.

We are well aware that education is a saving pillar in Islam, yet the reflection that is lacking in many Islamic communities is clearly overwhelming. For the same fact, and how important it is to educate women in Islam, the Prophet Muhammad revealed in his words, where education is only mandatory, absolutely binding.

All of this, however, is somehow contradicted, at least in our sample in London, where women seek to participate in all kinds of education and men seem to agree perfectly. In placement for reasons of participation in education, women as well as men respond quite positively to the

fact that education is something that they absolutely enjoy, meet their personal aspirations and fulfill their “dreams”. It is their great pleasure to meet new friends and exchange ideas and opinions but also very positive is the attitude that they seek to attend educational programs to escape the problems of everyday life and to get to know people and socialize.

In more than 500 points the Qur'an refers to the uniqueness and importance of education, and according to the Prophet it is the duty of Prophecy to fulfill the transmission of knowledge and wisdom to both men and women. The education of women and their participation in lifelong learning is very important and enormous despite the obstacles that arise, despite extreme and conservative traditions and religious fanaticism. The Islamic community wants to move to another level and increase women's participation in education and supports this effort in phrases mentioned in the Qur'an. Nevertheless, in the more traditional Islamic communities or primarily Islamic countries, this vision is lost, with the violation of the rights of women's participation in education and therefore its exclusion from the labor market.

From the answers of respondents in general by men and women, we see the importance they recognize in women's participation in learning and how essential is the power of educated women to influence their children and thus have a successful life. Therefore, improving the standard of living of women through continuing education, improves the level of family children, improves the level of the family and society in general.

4. Conclusions

- Even the men surveyed express their positive opinion on equality and equal opportunities for women in education and the labor market.
- The guilt that women feel about not provoking and overcoming men, because their position through religion is different and much more limited, is an obstacle to their education and their development as individuals, socially, spiritually and economically.
- There is no question that the power of religion is enormous and directs people and many situations, yet the woman is the victim of oppression and injustice or exclusion of words of religious writings and laws.
- The Qur'an describes equality between women and men in faith, moral and spiritual issues. Women and men have the right to reward and the virtues of a moral and peaceful spiritual life.
- Men's prevalence and favor, old traditions and misogyny feed many believers on writing “malicious” books and articles that violate the rights of Muslim women in education in local, closed and rural societies.
- The less educated population of Islam accepts as something normal the inferiority of the woman and considers the right thing to be that the woman remains in complete ignorance, without education or training and limited in the home and dedicated exclusively to any role within it.
- The most educated Islamic faithful and those in a better economic and social situation adapt and keep up with Islamic feminism, respecting and supporting and promoting women's education and training.
- Extreme situations and the exclusion of women from education and lifelong learning do not represent the “voice of Islam”.

- Nowadays, through research, we see the importance and value of exchanging ideas with others during educational courses and how enjoyable and constructive is the socialization of women through lessons and making new friendships and new acquaintances.

- Young people and residents of the Islamic community, where they have been raised and grown in non-Muslim countries, as in London in our research, are much more liberal and fully support equality in women’s opportunities and the full implementation of their rights not only education, but also in general.

- Women participating in lifelong learning and trained in general can manage their daily lives and various difficult situations much better.

- Women and men participating in lifelong learning and trained in general have more self-confidence and feel more “integrated” as personalities.

- Women and men participating in lifelong learning and trained in general believe that in the future they are an excellent example for their children.

- There seems to be a strong interest in women’s participation in lifelong learning and in programs for general knowledge and further training and acquisition or improvement of skills.

- Women are now seeking to participate in every kind of education and men seem to agree perfectly.

- The women of the Islamic community, through our research, clearly state that they seek to be informed and educated in a number of areas that were previously not feasible or permissible, such as arts, singing, dancing, tourism, etc.

- It is of particular interest to all Muslim community believers to maintain equality and give equal opportunities to women in education.

- It is also noted that many of the participants in the survey, but also the women of the Islamic community in general, are engaged in the field of education, first aid and household or housekeeping studies, which is not impressive since many believers in the Islamic community they do not want to come into conflict even with the most authoritarian traditions and the position of women in Islamic law.

- Several efforts are being made even in “Muslim” countries to improve and involve women in lifelong learning and education.

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Conflict of interest statement

The authors declare that there is no conflict of interest.

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Playful Learning and Skills Improvement

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Abstract

Learning is essential throughout human life. Accordingly, teachers and educators seek ways to strengthen learning. The use of play in the learning process seems to promote learning. Therefore, this research attempts to study how the integration of play in the learning process favors skills upgrading, using the quantitative research method and in particular the questionnaire. The sample consists of primary, secondary teachers and adult educators. In its context, variations in the attitudes of the participants in the sample arise, as regards their gender, the level of education, in which they work, and the years of service in it. The research results are in line with existing literature confirming the contribution of play to the improvement of skills and underline the need for further research and sensitization of the educational community so that it forms an integral part of the educational process, from formal up to adult education.

Keywords: play, skills, creativity, education, quantitative research, questionnaire.

1. Introduction

Views on the objectives of education and society have changed over the years. Educational success is not limited solely to the performance of learners (Väljärvi & Sahlberg, 2008). An important challenge is that learning is able of producing something new, interesting and relevant (Keller, 2009). Educational organizations now face the challenge of focusing not only on the production of academic curricula but also on creating and maintaining a culture and learning environment that enhances the overall development and well-being of the individual (cognitive, emotional, social, physical and cultural) (Organization for Economic Co-Operation and Development – OECD, 2007).

Adults with low levels of skills often experience barriers to learning. As participation rates of adults in learning activities across Europe demonstrate, adults with lower levels of education and with lower levels of skills participate less frequently in learning. Low levels of motivation, negative learning experiences and other factors contribute to the ‘participation gap’ between higher and lower skilled adults. In this context, the integration of play in the learning process can positively contribute to a successful learning environment, thus promoting the learning process and therefore skills improvement.

- The use of play in the educational process contributes to the development of important skills and competences.
- Opinions, regarding the role of play in the educational process, are differentiated between women and men in the sample.
- Opinions, regarding the role of play in the educational process, vary according to the level of education (primary, secondary, adult education), in which the individuals in the sample work.
- Opinions, regarding the role of play in the educational process, vary according to years of service in education of the sample individuals.

This study attempts to explore the role of play in skills improvement, as reflected in the statements of primary, secondary teachers and adult educators, who are the sample participants. Firstly, it is attempted to define the context in which the survey is based. In particular, chapter 1 presents the theoretical framework on the contribution of play to the educational process. In particular, the role of play in the development of skills and competences is analyzed. Correspondingly, chapter 2 analyzes the methodology followed in the context of this research. In particular, the necessity, the purpose, the exploratory questions and the assumptions of the research are presented. In addition, the research strategy is analyzed, the sample of research and the research tool are described. Chapter 3 refers to the descriptive results of the survey, the discussion of the findings, the synthesis of the results and their association with the assumptions. Furthermore, the constraints of this research, suggestions for improvement, and suggestions for further investigation in this field in the future are presented. Finally, chapter 5 presents the conclusions of the research.

1.1 Play, skills and competences

In modern society, it is challenging to reduce the gap that is constantly emerging from rapid changes between reality and formal education, as the demands of society in the twenty-first century are becoming more complex. The School of the Future should not simply guarantee a successful response to a variety of issues, but also enhance the skills and competences of individuals as future citizens. Through careful planning of the curriculum, in order to ensure its suitability, the training provided can be enhanced. Otherwise, if teaching methods are ineffective or if trainees develop skills that do not correspond to the requirements of modern reality, then the learning objective will fail. The main responsibility of education is not to offer tools that may be outdated before they are fully conquered, but to help adults become self-confident and capable designers and builders of their own tools as they progress (Claxton, 2002).

The contribution of play and its effectiveness in developing and enhancing the individuals' skills and competences in the context of education seems to have been of great concern to modern researchers. In particular, relevant studies in the United Kingdom have attempted to approach how games can be used at school. The results of the survey showed that it is not just its content that differentiates play from the limits of the curriculum. In particular, the results of the TEEM report (McFarlane, Sparrowhawk & Heald, 2002) showed that teachers and parents acknowledged that the use of play in learning can promote the development of important skills such as strategic thinking, planning/designing, communication, numeracy, negotiation, decision-making in the context of a group, and data management.

Examining the interaction of children within the game, scholars have tried to find out what children are really learning when playing. The nature of play involves a trial and error process, in order to overcome the challenges and obstacles it poses, thus promoting the development of logical thinking and problem-solving skills (Higgins, 2000). It is reasonable that learning outcomes in a creative and playful learning environment are expected to be multifaceted. These foster academic performance, cognitive skills, physical skills, participation and knowledge

creation skills. Such a learning environment is designed to stimulate the desire for learning, to ensure the well-being of the participants and the fulfillment of academic as well as non-academic goals (Hofer, 2007).

As learning outcomes, we define every possible combination of mental, physical and socio-emotional engagement. Consequently, learning environments that involve play and creativity have the effect of enhancing the physical, educational, cultural and social-emotional well-being of learners, at the same time encouraging the joy of learning. Besides, learners learn to develop their own ideas, test their limits, experiment with alternatives, give information to others and create new ideas based on their experience (Resnick, 2007).

However, despite the benefits play seems to offer learning, the educational community seems reluctant to accept the value of play as an educational tool or strategy. Instead, the use of games and simulations often occurs in other educational environments, such as corporate and military training environments (Greenblat, 1987). In school education, on the other hand, play has greater acceptance in the first school years and their use is limited in secondary, tertiary and adult education.

According to Roberts, Arth and Bush (1959), play is a model or theatrical simulation of reality. In fact, games provide a socially acceptable means of preparing the necessary skills that may be needed later in real life. In this direction, it is clear that the success of a game may require extensive critical thinking and problem-solving skills. Even the simplest games contain a complex set of properties. Children usually understand the basic concepts of the game easily, depending on their level of development. The idea of the game plays an organizational role in knowledge. For example, a story provides a conceptual framework, comprising a plurality of elements, such as the environment, the goal, the composition, and the analysis. Similarly, a game frame also provides a conceptual framework with corresponding elements. This environment can include imagination, game objects, goals, and rules as well as challenges for the players, thereby enhancing organizational skills and expectations in a complex interaction (Rieber, 1996).

According to Collins, Joseph and Bielaczyc (2004), the students, when they collaborated, appreciated not only the experience of other students, only in the field in which they worked, but also the experience in computers needed in the context of their activity, or even the experience in maintaining the coherence of the group, working effectively towards its goal. In this direction, the authors propose the concept of diverse expertise, which emphasizes respect and listening to others. Learners, in the same way, can acquire expertise as skillful players and designers of games, thus teaching other learners. This specialization may include skills in using a video camera, making videos etc, thus transmitting knowledge to their peers.

Research findings (Lieberman, 1965, 1967) demonstrate a link between play and divergent thinking in children, adolescents, and adults. Both theoretical and empirical evidence (Kagan, 1965; Piaget, 1951), concerning thinking processes of children at an early age, note a stricter observance of the rules and decrease in divergent thinking. Using play as a predictive variable and considering its existence stable and continuous at all age levels, it can help in the discovery of the function of divergent thinking. Respectively, using play in learning can favor the cultivation of divergent thinking.

Furthermore, research results place particular emphasis on decision-making skills in games. In particular, the game environment seems to require and at the same time enhance complex thinking required for decision making, assigning roles, choosing a strategy, and making the necessary steps that will ensure the successful outcome of the game. On the other hand, decisions concerning the management of groups of players, the creation of alliances, rivalry and competitiveness are building blocks of the game environment (Voulgari, 2012). In addition, negotiating the concept of democracy, free expression and preservation or loss of rights and privileges lead to the management of the concept of power and the structures that this one entails.

According to the sociocultural perspective, language is the main cultural tool for the creation of knowledge (Vygotsky, 1978). The ability to communicate and reason is equally important for both cooperation and success in education. Life often does not provide sufficient experience and guidance for collaboration (Mercer, 2000). In creative collaboration, learners become more reflective, as they serve as mirrors to one another (John-Steiner, 2000). Cooperative problem solving provides the opportunity to become aware of the decision-making and thinking process. Consequently, these learning experiences provide opportunities for socially mediated metacognition (Goos, Galbraith & Renshaw, 2002).

Many studies have shown that learners, who have practiced speaking and thinking in collaboration, have been using more explorative speech than the others, and this exploratory speech has promoted their cooperative capacity in both individual and collective problem-solving. In addition, in terms of creativity in learning, they have come to the conclusion that participatory activities can be an ideal field for developing skills and creative thinking (Rojas-Drummond et al., 2006). Therefore, as games often demand close cooperation and collaboration, the introduction of the game into the educational process contributes considerably in this direction.

In addition, the concept of problem-solving within the game offers advantages in the development of cognitive skills in the learning process. Problem-solving is largely specialized in one context and one field (Brown, Collins & Duguid, 1989). As a result, problem-solving in one field fails to transfer to others. Repeated practice, however, in multiple problems, can improve problem-solving within a given domain. When games are exciting and interactive, they can potentially provide a recurring problem-solving practice thus promoting problem-solving skills (Van Eck et al., 2009).

As it is evident from the above mentioned, even though the use of play has been approved as highly beneficial to learning, the vast majority of research on the benefits of play is restricted to its use at an early age (pre-school and primary education) (Bodrova et al., 2013; Gajdamaschko, 2005; Higgins, 2000; Kappas, 2005; Kagan, 1965; Rojas-Drummond et al., 2006; Rogowsky et al., 2017; Sutton-Smith, 1997). On the other hand, in secondary education, the examination-centered educational system in Greece and the pressure to cover the curriculum limit the use of alternative approaches and therefore of the use of play in teaching (Katsarou & Dedouli, 2008; Kysilka, 1998). As regards adult education, the use of innovative methods and techniques (Kokkos, 2005), show a tendency towards the inclusion of play in it.

1.2 Play and adult education

Adult learners, according to the theory of Andragogy, enter the educational process with specific characteristics and needs, as they need to know why they have to learn something. They seek to use their experience as learning sources and place particular emphasis on linking learning to their professional and social goals (Kokkos, 2005). Studies regarding the reasons for the involvement of adult learners in learning indicate that they choose to participate in it because of the following (Cross, 1981: 89): (a) successful response to social roles; (b) professional development; (c) responding to expectations of the others; (d) for the general good; (e) due to cognitive interests; (f) in order to escape from something that concerns them.

Similarly, Carp, Peterson and Roelfs (1974, as cited in Cross, 1981: 89) add the following: acquiring new knowledge; cognitive research; improving parenting; obtaining a degree; strengthening work profiles; and personal pleasure.

Because of the different and varied conditions that cause or require adult participation in the learning process, specific obstacles emerge from them. These obstacles may be internal or external. External barriers mainly concern their access to the educational process. The internal ones, on the other hand, are mainly related to their cognitive and psychological backgrounds.

Characteristically, the difficulty and reticence of contact and assimilation of new knowledge are observed (Kokkos, 2005). In addition, adult learners have a lack of self-confidence and experience anxiety and fear of failure in their contact with the learning process (Rogers, 2002).

According to Carp, Peterson and Roelfs (1974, as cited in Cross, 1981: 99), obstacles concerning the participation of adult learners in the learning process can be divided into three categories: (a) obstacles relating to life situations (situational barriers), the adult trainee experiences during the educational process; (b) institutional barriers, concerning procedures that discourage the adult employee to participate in the educational process; and (c) dispositional barriers, associated with the attitudes and perceptions of the individual for himself/herself as a trainee.

It is evident that obstacles to adult education are many and multidimensional. Therefore, attracting and retaining adult learners in the learning process is particularly demanding. The game can be an approach to aid adult education by encouraging knowledge alongside creativity and imagination (Lieberman, 1977). In this context, educational techniques are selected depending on the subject, the learning objective, the specific characteristics of the trainees and the trainer's abilities. Therefore, the following techniques, which encompass the concept of play, are used in adult education (Game of Acquaintance, Pedagogical Contract, Role-play, Simulation, Debate, the Technique of the Ethical Dilemma, Brainstorming, Pedagogical Game, Project, Theatrical play – Dramaturgy, Problem Solving, Research)

2. Methodology

This chapter presents the methodology of this research. First, reference is made to the necessity of the research, its purpose and objectives. Following is the presentation of research axes and exploratory questions. Then, the Research Strategy and the corresponding methodological approach are presented. Subsequently, the data collection means are analyzed and the sample of the survey is presented. At the same time, reference is made to the process of granting the questionnaire, as well as to the necessary actions, in order to ensure the credibility and validity of the research process. This chapter is completed with the description of the final sample.

2.1 *The necessity of the research*

In the context of modern society and therefore in this of education, which is an integral part of society, the functions and benefits that the latter can and must provide are constantly reviewed. As Välijärvi and Sahlberg (2008) point out, educational success is not limited solely to the performance of learners but also to the positive experience, as this results from the learning process. The dynamic combination of acquiring knowledge through a meaningful and enjoyable process is a challenge for educators and those involved in educational planning. The provision of an active role for learners, both in the development of learning conditions, and in the process of improving and designing learning environments is imperative in modern reality (Awartani, Whitman & Gordon, 2008).

The goal of education fails, if the teaching methods are ineffective or meaningless without attracting the interest of the participants. Therefore, this research attempts to explore and highlight the contribution of the use of play to the educational process as well as its effectiveness in different levels. This research is considered necessary as the demands of modern society make it necessary to find techniques that transform learning in an essential and experiential process.

Criteria for selecting the subject of this research were both the personal interest of the researcher on the role of play in the educational process and the existence of relatively limited and fragmentary investigations (Voulgari, 2012; Zigoritsas, 2008; Kangas, 2010) especially in the

Greek territory, about the effectiveness of play in formal, non-formal education and adult education (Kokkos, 2005). This is precisely the originality of this research, which attempts to highlight all those particular features of play that contribute to corresponding benefits in terms of skills and abilities across the spectrum of human life and not exclusively in the context of childhood or at the narrow boundaries of primary education, on which the majority of existing research focuses.

2.2 Purpose and objectives of the research

The characteristics of modern society highlight education as a lever of growth and prosperity at an individual and social level (Säljö, 2004). In this direction, the purpose of this research is to investigate the role of play in the educational process at the level of formal and non-formal education, as well as adult education through, from the point of view of the teachers and educators of these levels. The conduct of the research, through an appropriate research methodology, intends to:

- (1) highlight the educational benefits and effectiveness of play;
- (2) draw conclusions and suggestions for feedback;
- (3) create a framework for reflection, exploitable by researchers with a relative orientation.

Moreover, in the context of this research, it will be attempted to identify differences between the members of the sample, depending on the level (formal, non-formal, adult education) they teach, gender and years of service. The aim of the research is, therefore, to focus on the use of play in the educational process for its upgrading. This is precisely why the present research attempts to clarify the role and benefits of play in learning, in order to draw conclusions about its role in the educational process.

2.3 Exploratory questions

Based on the above, the construction of the data collection tool was based on the following research axis:

- The contribution of play in the educational process.

As a result of the study of the relevant theoretical framework, the need for further investigation and personal reflection and observation of contemporary educational reality, the research questions of this research are as follows:

- Does play contribute to the development of important skills and competences during the educational process?

Accordingly, the research cases underlying this research are as follows:

- Play is expected to contribute to the development of important skills and competences during the educational process.
- Opinions, regarding the role of play in the educational process, are differentiated between women and men in the sample.
- Opinions, regarding the role of play in the educational process, vary according to the level of education (primary, secondary, adult education), in which the individuals in the sample work.

- Opinions, regarding the role of play in the educational process, vary according to years of service in education of the sample individuals.

2.4 Methodological approach – Research strategy

The purpose and objectives of the research have contributed to shaping the methodological design of its empirical part and determined the selection of the approach and the way data is collected. Subsequently, through the research axes and questions elaboration, the quantitative method was chosen. The quantitative approach is extensively applied to sample empirical surveys (Tsiolis, 2011), where social phenomena are analyzed in order to find general norms or trends as they emerge through a variety of cases. According to this approach, the phenomenon under study is considered at the level of the parameters that are the scope of the research. These parameters are, respectively, the variables, whose relationship is empirically controlled by the hypotheses. The data, resulting from the above process are standardized to be measured and analyzed statistically (correlation and variance testing).

The characteristics of this research led to the choice of the quantitative method, using the questionnaire for the data collection. Specifically,

- the need to gather a sufficient sample in order to draw safe conclusions,
- the size of the population under consideration,
- the different conditions of each institution,
- the uneasiness of exposure to an unknown researcher as well as time and financial limitations of research led to this direction.

Besides, this research, according to specific methodological axes (Andreadakis & Vamvoukas, 2005), focuses on primary, secondary and adult education in the area of study. More specifically the research is:

- individual research in terms of the number of researchers,
- on the initiative of the researcher, in terms of the way it was conducted,
- a modern, quantitative approach, in terms of its duration,
- with a questionnaire as concerns the collection medium.

Subsequently, the research strategy is implemented at specific stages. First, the population of the survey is determined in order to select the appropriate sample. On the second level, the research tool (questionnaire) is constructed and the way of its delivery is decided. Then, a pilot survey is carried out to ensure the credibility of the research tool and make the necessary corrections in this direction. Then, the questionnaires are distributed in electronic form through the Google forms tool. The following is the collection, export, and coding (Cohen & Manion, 1994) of results in Microsoft Excel. The SPSS statistical program is then used for the statistical analysis of the data. Finally, the results are presented through graphs and corresponding analyses.

2.5 The sample of the research – Questionnaire process

As the educational process extends throughout human life, the target population of the research is teachers and educators working in primary, secondary education and adult education. The questionnaire was sent to selected individuals via e-mail. Random sampling applied has proved useful in the context of eligibility checks. The sample consists of 163 participants. The questionnaires were submitted to the survey participants during the period from 1 November 2017 to 30 December 2017.

2.6 Reliability – Validity

Ensuring reliability and validity is of great importance for a successful research. The research tool used in this research is the questionnaire. In order to ensure the validity of the questionnaire, a careful selection of the questions was made so that all research axes are covered, relevant and at the same time easily understood by the respondents, thus obtaining valid responses (Creswell, 2011). In this direction, closed-ended questions were used, which ensure greater validity than open-ended ones (Cohen, Manion & Morisson, 2000).

In addition, the validity of content for this research was tested during the creation of the research tool, in particular during a pilot survey. In the framework of the pilot survey, the suitability of the questions of the questionnaire was tested. The research tool was given to selected experts with relevant experience on the research subject. The experts then assessed the relevance of the questions with a five-point agreement scale and recorded their comments in the frame of an open question. Finally, there was an analysis of the data and a corresponding adaptation of the research tool (Moustakas, 2017).

In terms of reliability, the Internal Consistency indicator was used. The testing of the reliability of internal consistency in the context of this research was also conducted at the pilot survey stage. As far as our research tool scales are concerned, Cronbach's [alpha] reliability index was used, which showed very good internal consistency as it was more than 0.70.

2.7 Methods and techniques

In order to process the research data, Microsoft Excel and SPSS for the statistical analysis are used. In more detail, data are analyzed at two levels, that of descriptive and inductive statistics. At the level of descriptive statistics, as most variables were quantitative, frequency distribution tables, mean, as a central tendency measure, and standard deviation as a dispersion measure are presented. In the questionnaire five-point Likert scales are used, this means that the maximum value is 5. Specifically, in a five-point scale question, which measured the degree of agreement of teachers/educators on a specific proposal, 4.0, for example, would mean a high level of agreement.

In particular, the Likert scales are used are as follows:

- I agree very much 5 - pretty much 4 - Not too much or too little 3 - Little 2 - Not at all 1,
- I use very often 5 - often 4 - sometimes 3 - rarely 2 - never 1.

At the level of inductive statistics, a normality test was initially performed with the Kolmogorov-Smirnov test in order to select the appropriate test. The Kolmogorov-Smirnov test showed that the normality requirements were significantly violated for all variables, as the values of the dependent variables did not follow a normal distribution. Subsequently, the use of the parametric t-test criteria for independent samples and one-way ANOVA were excluded. So, the results were carried out with the non-parametric statistical tests Mann-Whitney U and Kruskal-Wallis H.

Mann Whitney or U-test for independent samples (Andreadakis & Vamboukas, 2005) was used in the cases of a dichotomous variable with two scales, such as gender and a qualitative variable on a scale with a single number of categories for example *in your opinion to what extent participants in the game develop communication* (five-point scale of agreement). Correspondingly, the Kruskal-Wallis test was used in cases of a categorical variable with more than two categories, such as the level of education (primary, secondary, adult education), in which the participants of the sample work and a qualitative categorical variable with a single number of

categories, such as to what extent you think that *the participation in the game enhances respect and listening to the others*. It is worth noting that non-parametric tests are used to find statistically significant differences between two (Mann-Whitney tests) or more samples (Kruskal-Wallis test), by comparing the mean ranks of the respective samples. A minimum level of statistical significance (p-value) was set to .05 (Roussos & Tsaousis, 2002).

3. Results – Discussion

3.1 *Play and development of important skills and competences*

As far as the development of important skills and competences within the game is concerned, the statements of teachers/educators of the sample confirm the findings of similar studies and theoretical approaches, as they are largely in agreement with the statements of this particular category. Specifically, the participants of the sample agree to a great extent that the inclusion of play in the educational process enhances decision making and negotiation, as well as data management skills (McFarlane et al., 2002). Besides, the extensive discourse (Higgins, 2000; Rieber, 1996) that claims that the context of the game favors the development of problem-solving skills is suggested in the answers of the participants of the sample. In the same direction, research findings confirm that the integration of play in the learning process improves knowledge-building skills and enhances the ability to experiment with alternatives (Resnick, 2007).

Furthermore, the use of play improves *planning/designing skills* as relevant research findings state (McFarlane et al., 2002). Correspondingly, in the context of inductive analysis, people with fewer years of service in education appear to believe more strongly that play enhances the person's ability to plan and design, in relation to those with more years. In particular, teachers/educators with up to 20 years of service in education, especially those who have up to 4 years believe to a greater extent (mean 4.30) that *play helps develop planning/designing skills* ($H(4)=12.329$, $p = .015$).

Accordingly, research findings (Collins et al., 2004; Kangas, 2010) claim that skills that involve respect and listening to others seem to be reinforced in the frame of the game. This is also stressed by the high degree of agreement of the answers in the sample (average score of agreement 4.49). It is also worth noting that the women of the sample appear to agree with this statement to a greater extent than men, albeit with a slight deviation.

Furthermore, the notion of communication enhancement in the field of playful learning is of great importance, as the participants of the sample agree to great extent in this direction (mean 4.63) confirming relevant research findings (McFarlane et al., 2002). In the context of inductive analysis, women appear to place greater emphasis on the contribution of play to promoting communication than men. Women seem to believe more strongly (mean 4.70) that *participants in the game develop communication skills* than men (mean 4.45), ($U=2094,500$, $p = .008$). A more general conclusion emerging from the statements made by women in this particular section is that they seem to place greater emphasis than men on the contribution of play to the cultivation of communication skills as articulated through respect and listening to different opinions. More specifically women agreed to a greater extent (mean 4.56), compared to men as regards the statement that *the participation in the game enhances respect and listening to the others* ($U=2181,000$ $p = .050$). Also, in their response, in the statement that play strengthens *respect and listening to others*, teachers working in the primary school also agree more strongly (mean 4.68) than those working in adult education (mean 4.62) and those who work in secondary education (mean 4.20) ($H(2)=10.579$, $p = .005$).

The statement that play improves participation and inclusiveness (Higgins, 2000) is in accordance with the views of the persons of the sample. They strongly believe (mean 4.69), ($U=2203,000$, $p = .042$) that participation in the game enhances inclusiveness. In this case, as in

the previous one, female teachers seem to place more emphasis than men on the contribution of play to the cultivation of participation and inclusiveness. A similar emphasis on the cultivation of participation and inclusiveness through the implementation of play appears to be placed by primary and adult educators in relation to secondary education teachers. Accordingly, teachers working in primary education, believe to a greater extent (mean 4.79), that play strengthens the individual's inclusiveness, followed by those working in adult education (mean 4.70) and finally those working in secondary education (mean 4.44), ($H(2)=8.676$, $p=.013$).

The same tendency is evident regarding the statement that play enhances organizational skills. The teachers working in primary education agree with this statement to a greater extent (mean 4.47), those working in adult education agree less (mean 4.41) and so do those working in secondary education (mean 4.07), ($H(2)=5.964$, $p=.051$). Nevertheless, through the answers of all the participants, it is evident that the concept of strengthening organizational skills, within the frame of the game, is broadly supported by the findings of the research, confirming the research of Rieber (1996) Women again support the contribution of play to the enhancement of organizational skills more than men. More specifically, women express the view (mean 4.38) to a greater extent than men (mean = 4.13), that *the participants in the game develop organizational skills* ($U=2014,000$, $p=.013$). In the same direction, primary school teachers and adult educators tend to agree more than those working in secondary education.

In addition, the participants of the research strongly confirm relevant theories that claim that play improves critical (Brody, 2005; Gee, 2003) and divergent thinking (Lieberman, 1965, 1967). Women believe to a greater extent (mean 4.40), that *the participants in the game develop critical thinking skills*, than men (mean = 4.13), ($U=1986,000$, $p=.008$).

With regard to the corresponding theoretical framework concerning the improvement of the individual's numeracy skills (McFarlane, et al, 2002) and physical skills (Hofer, 2007), the respondents' statements tend to agree in this direction but more moderately. More particularly, teachers working in primary education believe to a greater extent (mean 4.21) that the development of numeracy is favored in the context of the game, followed by those working in adult education (mean 3.72) and respectively those working in secondary education (mean 3.79), ($H(2)= 6,881$, $p=.032$).

3.2 Restrictions – Suggestions for improvement

This research has got some limitations and weaknesses. The majority of its weaknesses are due to the tight timeframe for its completion. In order to shape a more accurate picture of the perspective of teachers/educators concerning the contribution of play in the educational process, the research could be expanded as regards the size of the sample. As the sample of teachers used in the research is limited, its results are not easily generalized across the population of teachers in Greece. Therefore, the research population could be broadened more systematically.

Besides, the present research focused on the analysis of the results collected by the means of an electronic questionnaire sent to the teachers/educators. In the future, it could be attempted, in addition to expanding the size of the sample, to proceed to the triangulation of the research. This could be implemented by completing it through interviews, from which the individual perspective and new ideas on the use of play could emerge.

3.3 Proposals for further investigation

The importance of approaching the educational process in such a way as to ensure the greatest learning outcomes has made it imperative to find effective techniques and methods in this direction. Researchers in education aim to raise learners' interest and increase their engagement

in the learning process, thus delivering better learning outcomes. In this perspective, the importance of integrating play into the learning process can act as a driving force both in improving knowledge and in developing important skills.

Therefore, this research attempts to promote the use of play in learning, highlighting its advantages. The conclusions of the research result in the following suggestions. The majority of research on the benefits of play is largely restricted to the context of its use at an early age (pre-school and primary education) (Bodrova et al., 2013; Gajdamaschko, 2005; Higgins, 2000; Kappas, 2005; Kagan, 1965; Rojas-Drummond et al., 2006; Rogowsky et al., 2017; Sutton-Smith, 1997). The increasing discourse, though, on the use of innovative methods and techniques in adult education (Kokkos, 2005), show a tendency towards the inclusion of play in it. Instead, in secondary education, the examination-centered educational system in Greece and the pressure to cover the curriculum are almost prohibitive for the use of different approaches and therefore of the use of play in teaching (Katsarou & Dedouli, 2008; Kysilka, 1998).

As a result of the positive conclusions of this research on the contribution of play to the educational process, this could lead to emphasize the advantages of playful learning and contribute to further research about its benefits, especially at the higher levels of education.

Interestingly, there appears a differentiation in the gender perspective on the contribution of the use of play in learning. Women seem to place greater emphasis on the communicative character of play. Therefore, further exploration of gender attitudes towards the use and positive contribution of play could highlight new axes and perspectives, as well as alternative ways of thinking and approaching learning.

4. Conclusions

The positive contribution of play to the educational process seems to be confirmed by the findings of this research. The responses of the teachers/educators of the sample are broadly in line with relevant literature.

As regards the development of important skills in the frame of playful learning, the latter seems to strengthen organizational skills (Rieber, 1996), decision making, negotiation skills. At the same time, it improves both designing/planning and data management skills (McFarlane et al., 2002), as well as critical thinking (Brody, 2005; Gee, 2003; Lieberman, 1965, 1967). Furthermore, it contributes positively to communication (McFarlane et al., 2002), enhances respect towards the others (Collins et al., 2004; Kangas, 2010) and fosters participation (Higgins, 2000). In the same direction, it enhances skills of knowledge creation, experimentation with alternatives (Resnick, 2007), numeracy (McFarlane et al., 2002) and physical skills (Hofer, 2007).

The concept of organizational skills and participation within the game are stressed more by primary teachers and adult educators than those in secondary education, possibly due to the emphasis on the importance of participatory techniques in the curricula of university schools of pedagogical education, from which primary teachers have graduated. It seems to also dominate adult education, over the past few years (Kokkos, 2005). Finally, women seem to place more emphasis than men on the contribution of play to the cultivation of communication skills and development of the individual's participation and inclusiveness.

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