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Περιεχόμενα - Contents

EDITORIAL

The second issue of the International Journal of Educational Innovation (I.J.E.I.) of the Scientific Union for the Promotion of Educational Innovation (EEPEK), within 2022 is available, thus, reflecting primarily the great interest in it by the educational community. Particular reference is made to the colleagues-members of the reviewing committee of this journal - for their outstanding work and ongoing effort to establish this journal as a valid means of knowledge contribution to the educational communities of all levels. Colleagues' response to the journal's invitation to participate in the journal processes, as members of the scientific and editorial committee or as authors of research papers, was particularly great and provided the educational community with another form of constructive interaction other than that of conferences, training seminars and other actions implemented. In this way, we come one step closer to our central strategic aim: the creation of a large Learning Community, which will include all teachers, at all levels of education.

Therefore, once more, this issue presents a variety of topics related to education, and educational practices. The aim of every teacher is to find the best way possible to achieve the goals set in any subject taught and/or target group/s addressed. These goals include conveying knowledge, enhancing the cultivation of attitudes and values, such as self-confidence, self-esteem, or empathy, and the cultivation of skills such as interaction, communication or the ability to learn how to learn. However, the main objective of education is to help students meet challenges throughout their lives. Thus, this issue presents innovative suggestions, tools and techniques related to teaching and learning, as well as issues related to education and educational innovation, thereby highlighting both the need for research in education and the need for education to apply research results to practice. In order for teachers to achieve these goals and objectives, the importance of sharing good practices and knowledge are principal. Our goal then is to disseminate teachers' suggestions and ideas as well as their research findings.

We hope that this issue will help all those, educators and non-educators, who dream of effective education through innovation to provide ideas for a better future for all students. We will keep on with the same passion …

Dr. Charilaos Tsichouridis, Chief Editor, University of Patras
Dr. Dimitrios Kolokotronis, EEPEK President, Publishing Director

Interpreting the Statistics of eTwinning: European Quality Label

Themelis Giannis

Refugee Education Coordinator, Greek Ministry of Education
giannisth@hotmail.com

Abstract

The present study makes an attempt to provide some insight into the performance of the forty-four countries participating in the eTwinning European Quality Label Awards. These awards set an area of competition for educators in those countries. The analysis attempts to determine the factors that set the countries apart in terms of performance. Making use of quantitative methods (descriptive and inferential statistics), the results suggest that the rank of each country in the EQL awards is not random at all. On the contrary, it can be explained by the specific characteristics of the country, which operate as reliable performance predictors. Those characteristics include the geographical location, the national income, or the quality of the provided education. The insight gained by the analysis, might as well serve as a tool for further use, in order to interpret similar educational programs.

Keywords: eTwinning, Quality Labels, Awards, Statistics

Introduction

The growth of eTwinning has been widespread in the last couple of decades in Europe. Today, it appears as an established program among the educational communities, with more than 118,000 completed projects so far (June 2021; source: European eTwinning portal). With the United Kingdom leaving the eTwinning network at the beginning of 2021, the program has remained with 43 country-members; these are the 27 EU countries, plus 9 non-EU countries, such as Norway, and another 7 countries from the European periphery, such as Georgia. Having recently been integrated into the Erasmus+ strategic program of the European Union, eTwinning is a key program for promoting the 'Europeanization' of the educational curricula, a process backed by multiple actions in the past years (Grek et al., 2009; Camilleri, 2016). Apart from its European dimension, eTwinning promotes innovative teaching through educational, social, and technological competencies, which are in the epicenter of the educational transformation worldwide these days (Zhu et al., 2013). The European Quality Label (EQL) is an international certification of achievement for eTwinning projects fulfilling specific quality criteria. It is awarded to the teachers who implement the projects, and follows the new trends of assessing educational quality, that is, by means of Open Quality Labels or Badges (Young, 2012; Papadimitriou & Niari, 2017). Given the different goals, structures, and methods of the educational systems across the participant countries (e.g., Karabulut, 2018), it is not surprising that the distribution of the EQLs does not follow a linear pattern, based, for example, on the size of the country. The rationale behind the analysis that follows, is to explore possible patterns that successfully explain the EQL distribution, namely the performance of each country. In this context, a number of factors are analyzed; first, the European geography, which features two major clusters of countries: the Western (or Central) and the Eastern. The literature provides sufficient evidence that there are major differences in the educational systems of the two groups of countries (Steptoe & Wardle, 2001; Perry, 2009). These differences, of course, are linked to the political and social reality in those countries in a significant period of the recent past, the so-called Soviet era. Several terms are used to mark the existing diversity, such as the "market" versus "public" orientation of their educational systems. However, it is also true that both types of systems (i.e., former communist vs non-communist) have been undergoing a steady process of transformation –towards convergence– in the post-communist decades (Scott, 2007). As a second factor, pure geography comes into play, which dictates that neighboring countries are expected to feature

similar performance; very often neighboring countries share features such as the language, the history, or the political organization/system. National income is also analyzed as a factor of cross-country variation. For example, it has been well documented that high-quality national education leads to higher national income (Hanushek & Woessmann, 2010; Solaki, 2013). It has been also found that this relationship is reciprocal, as higher family income (which reflects national income) leads to more years of schooling. The latter is often used as an index for describing the quality of the educational system of a country (Cordoba & Ripoll, 2013), with numerous studies portraying the diversity among countries in Europe and worldwide (e.g., Adams, 1993; Masci et al., 2018). In the light of these facts, both the factors of national income and quality of education are employed to interpret the differences in performance among the countries of the sample. A final issue of consideration is the criticism articulated over the effectiveness of European programs such as eTwinning. Although there are certain advocates of the fruitful implementation of these programs, whereby the participants (e.g., teachers) find themselves gaining several benefits (Unlu, 2015), more and more voices are being heard pointing out that the actual goals of the programs are not fulfilled and the overall expectations are not met (Ryba, 1995; Kuhn, 2012). The aim of this study is to clarify the matters and determine whether the performance of each country in eTwinning –as manifested by the ranking in the EQL awards– is indicative of more important tendencies within each country.

Data and method

The sample of the study draws from the dataset of the EQL awards available on the European eTwinning portal for the year 2020. The first data category of the set refers to the absolute number of the EQLs awarded to the teachers of each of the 44 countries. The total number of the awarded EQLs is 11,367. The percentage of the awarded EQLs is then calculated for each country in the analysis. Given that the participant countries are very different in size, country population (source: The US Census Bureau) is correlated with the awarded EQLs, in order to create a basis for cross-country comparison. Thus, the normalized number of EQLs per country (EQLs per one million people) serves as the first statistic of reference. The second statistic of reference is the relative number of awarded EQLs per teacher, being the ratio of the country's EQLs for every 1000 eTwinners (i.e., teacher-members of eTwinning; source: European eTwinning portal). In this way, the performance of teachers across the participant countries can be measured and compared. After that, the geographical dimension is examined, with the 44 countries clustered into 3 groups. The first group ('Eastern') includes the countries of Eastern Europe, such as Poland and Ukraine, but not only these; it also includes countries such as Albania and Croatia, which, although not geographically classified as Eastern, share the same socio-political 'Eastern European' (i.e., former communist) heritage with the other 'Eastern' countries. A second, 'Western', cluster includes the countries of Western Europe plus the countries sharing basic socio-political characteristics, such as Greece or Finland. Therefore, the 'Eastern-Western' division is not just geographical, but also –or mainly – socio-political. The third cluster includes the countries of Middle East and North Africa, which are both geographically and socio-politically diverse from the rest of the countries. For a more comprehensive coverage of the geographical criterion, the sample is then geographically re-clustered, in order to determine which type of clustering ultimately functions as a better predictor for country performance. Therefore, the following five, clearly geographic, clusters are formed: 'Balkan', 'Baltic', 'Middle East & North Africa', 'Scandinavia', and the 'rest' (i.e., including the rest of the countries).

The analysis develops with two more factors, which are expected to function as additional predictors for country performance. One of them is of economic nature, and it takes the country's nominal GDP per capita as an index reflecting the living standards in each country (source: The World Bank). The correlation between the awarded EQLs and the GDP is expected to determine whether teachers with different living standards fare differently in the EQL

awards. The last factor of potential variation employed in the analysis is socio-educational, namely the ranking of the countries within the *Education* index of the United Nations (source: UN Human Development Reports); the index measures the ratio between the mean *Years of Schooling* against the *Expected Years of Schooling* in each country. Table 1 shows the complete dataset of the sample.

Table 1. The dataset of the study

Country	EQLs		EQLs/ population (1M) ratio	EQLs/ 1000 teachers	Region	Nominal GDP (in $K)	UN Education index
	abs.	%					
ALBANIA	143	1.3%	49.3	26.7	Eastern	4.5	0.609
ARMENIA	34	0.3%	11.3	18.1	Eastern	3.9	0.701
AUSTRIA	12	0.1%	1.3	2.2	Western	47.3	0.794
AZERBAIJAN	476	4.2%	47.1	164.9	Eastern	4.1	0.700
BELGIUM	54	0.5%	4.7	6.0	Western	43.3	0.812
BOSNIA & HERZEGOVINA	173	1.5%	52.4	98.2	Eastern	5.4	0.655
BULGARIA	83	0.7%	12.0	8.2	Eastern	8.2	0.749
CROATIA	575	5.1%	140.2	36.1	Eastern	13.2	0.770
CYPRUS	19	0.2%	23.8	6.1	Western	18.7	0.776
CZECH REPUBLIC	41	0.4%	3.8	3.5	Eastern	20.3	0.866
DENMARK	7	0.1%	1.2	0.8	Western	57.5	0.873
ESTONIA	25	0.2%	19.2	4.7	Eastern	20.2	0.859
FINLAND	12	0.1%	2.2	1.4	Western	45.8	0.815
FRANCE	149	1.3%	2.3	2.3	Western	39.8	0.816
GEORGIA	42	0.4%	10.5	24.8	Eastern	3.8	0.770
GERMANY	55	0.5%	0.7	1.9	Western	44.7	0.884
GREECE	392	3.4%	37.7	12.9	Western	19.2	0.797
HUNGARY	27	0.2%	2.8	4.8	Eastern	14.4	0.805
ICELAND	10	0.1%	33.3	5.7	Western	73.2	0.847
IRELAND	4	0.0%	0.8	1.1	Western	69.7	0.887
ITALY	558	4.9%	9.2	6.2	Western	32	0.790
JORDAN	68	0.6%	6.7	72.5	M.E. & N.A.	4.1	0.700
LATVIA	34	0.3%	17.9	4.6	Eastern	15.6	0.813
LEBANON	3	0.0%	0.4	26.1	M.E. & N.A.	7.9	0.631
LIECHTENSTEIN	1	0.0%	33.3	25.0	Western	165	0.762
LITHUANIA	117	1.0%	43.3	11.1	Eastern	16.7	0.877
LUXEMBURG	1	0.0%	1.7	1.5	Western	105	0.762
MALTA	18	0.2%	36.0	4.7	Western	28.6	0.733
MOLDOVA	51	0.4%	12.8	64.6	Eastern	2	0.653
NETHERLANDS	11	0.1%	0.6	1.2	Western	48.8	0.894
NORTH MACEDONIA	121	1.1%	57.6	54.3	Eastern	5.4	0.642
NORWAY	6	0.1%	1.1	1.0	Western	75.4	0.910
POLAND	265	2.3%	7.0	3.5	Eastern	13.9	0.825
PORTUGAL	324	2.9%	31.8	16.6	Western	21.3	0.728
ROMANIA	463	4.1%	24.1	14.2	Eastern	10.9	0.748
SERBIA	243	2.1%	27.9	59.1	Eastern	4.7	0.695
SLOVAKIA	54	0.5%	9.8	4.6	Eastern	17.6	0.802
SLOVENIA	27	0.2%	12.9	5.3	Eastern	23.5	0.863
SPAIN	527	4.6%	11.3	7.1	Western	28.1	0.794
SWEDEN	8	0.1%	0.8	0.7	Western	54.1	0.830
TUNISIA	42	0.4%	3.6	19.5	M.E. & N.A.	3.5	0.621
TURKEY	5884	51.8%	69.8	21.9	M.E. & N.A.	10.5	0.652
UKRAINE	167	1.5%	3.8	60.9	Eastern	2.5	0.796
UNITED KINGDOM	41	0.4%	0.6	-	Western	39.5	0.860

The statistics

Taking a look at the dataset, one observes that all forty-four country-members of eTwinning are represented in the awards; even small countries such as Liechtenstein or Luxemburg are included in the list. Another highlight of the awards is the 5884 EQLs obtained by Turkish teachers, a number accounting for more than half (51.8%) of the total labels. This

value stands out as an extreme outlier, as it is almost tenfold higher than that of the second country (Croatia: 575 EQLs, 5.1%), and it will be further investigated later on in the analysis. Regarding the ranking of the other countries (in descending order), 8 of them feature an EQL share between 5% and 3%, another 9 countries a share between 3% and 1%, 17 countries a share between 1% and 0.2%, and a final number of 11 countries a share below 0.2% –with 2 of them (Liechtenstein and Luxemburg) featuring only 1 EQL (0.01%). The mean number of EQLs per country is 258, while the median is 46; the wide difference between the two values is mainly attributed to the relative very high score of Turkey. When the analysis takes into account the size of the countries (i.e., population), the ranking changes drastically. Picture 1 shows the relevant results (EQLs per 1 million people).

Picture 1. Awarded EQLs per country (N=44) corrected for the population (1M people; darker shades: higher scores)

Croatia is the country with the best score among the 44 countries: 140 EQLs for every one million people. Turkey comes second, with 70 EQLs, and North Macedonia third, with 58 EQLs. Bosnia & Herzegovina, Albania, Azerbaijan, Lithuania, Greece, Malta, Iceland, Liechtenstein, and Portugal follow in descending order, all with more than 30 EQLs. The next group of countries (in descending order), featuring 30-10 EQLs, includes Serbia, Romania, Cyprus, Estonia, Latvia, Slovenia, Moldova, Bulgaria, Romania, Spain, and Georgia. After that, a rather large group of countries featuring 10-1 EQLs includes Slovakia, Italy, Poland, Jordan, Belgium, Czech Republic, Ukraine, Tunisia, Hungary, France, Finland, Luxemburg, Austria, Denmark, and Norway. Finally, there is a group of countries featuring less than 1 EQL, including Ireland, Sweden, Germany, Netherlands, UK, and Lebanon. The mean score of the 44 countries is 20 EQLs per million people, while the median is 10.9 EQLs per million people. The overall performance of the countries in this category (awarded EQLs corrected for population), offers the first basis for direct and meaningful comparison. In what follows, the additional four factors employed by the study are examined by means of descriptive and inferential statistical

analysis, in an attempt to form a better picture of the results and better interpret the ranking of the countries.

Teacher performance

In this section, the relative performance of teachers in each country is examined. The number of registered teachers in eTwinning per country is correlated with the number of awarded EQLs, in order to acquire some indication on the quality of their work. This time, UK is not included in the results, as there are no available data for registered British eTwinners anymore. Employing the ratio of the awarded EQLs per 1,000 teachers as the statistic of reference, a series of trends emerge from the results. According to them, Azerbaijan features the highest ratio, with 165 EQLs per 1,000 teachers. This means that in 2020, almost 17% of the Azerbaijani eTwinners were involved in a project whose quality fulfilled the criteria of the European Quality Label. Given that only a portion of the registered eTwinners must have finally submitted a project during the school year 2019-2020 –as is often the case across countries, then the success rate is even higher for Azerbaijani teachers. Another noticeable case is that of Bosnia & Herzegovina, which once again stands high in the ranking, in second place with 98 EQLs (per 1,000 teachers). Jordan, Moldova, Ukraine, Serbia, and North Macedonia follow with 73-54 EQLs, while a number of 12 countries follow with 36-11 EQLs (in descending order: Croatia, Albania, Lebanon, Liechtenstein, Georgia, Turkey, Tunisia, Armenia, Portugal, Romania, Greece, Lithuania). The majority of the countries (22 countries) feature between 10 and 1 EQLs (in descending order: Bulgaria, Spain, Italy, Cyprus, Belgium, Iceland, Slovenia, Hungary, Estonia/Malta, Latvia/Slovakia, Czech Republic/Poland, France, Austria, Germany, Luxemburg, Finland, Netherlands, Ireland, Norway). Finally, Denmark and Sweden feature the lowest scores, with less than 1 EQL (0.8 and 0.7 EQLs respectively). The results are informative of the level of commitment in eTwinning for teachers in each country. Therefore, the higher the score, the more submitted projects per teacher for this particular school year (2019-2020). In other words, higher scores reflect stronger involvement in eTwinning and less idle eTwinning memberships. However, another interpretation could also stand. That is, assuming there are no differences in the quantitative level of teacher commitment, higher scores could mean higher project quality for the teachers involved. This, in turn, means that teachers in specific countries are more concerned about quality in their projects than their colleagues in other countries. A combination of the quantitative and the qualitative parameters could also be plausible –something which is the most probable to happen. Whatever the case might be, higher scores show higher commitment, namely teachers taking eTwinning more seriously in their work. In the remainder of this unit, the three remaining factors are examined for a meaningful correlation with the awarded EQLs. Liechtenstein is not included in these analyses, as its very small population could distort the results.

Geographical clustering

With the descriptive statistics suggesting there is some degree of correlation between the EQL distribution and the geographic location of the countries, the participant countries are clustered into 3 categories. The first cluster includes the 20 'Eastern' countries, namely Albania, Armenia, Azerbaijan, Bosnia & Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, and Ukraine. Most of these countries are located in Eastern Europe, however, location is not the only selection criterion. Countries such as Croatia or Georgia are included in this cluster, despite being located in the Western Balkans and the region of Caucasus in Asia respectively. The reason is that countries like these have had a similar political, social, and educational heritage, which was formed during the Cold War era, an element expected to provide a meaningful insight into the results. The next cluster includes the 19 'Western' countries of the sample, namely Austria, Belgium, Cyprus, Denmark, Finland,

France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxemburg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, and UK, using similar criteria once again. Finally, the 4 countries of the Middle East and North Africa, namely Jordan, Lebanon, Tunisia, and Turkey, form the final cluster ('M. East & N. Africa'), with the geographical criterion being more prevalent here. However, the ethnological criterion cannot be disregarded, as these countries share a lot of characteristics, such as culture and religion. In the light of these facts, the 3 clusters are correlated with the distribution of the EQL awards, the latter being expressed through the awarded EQLs corrected for the country's population (see table 1). The results are shown in table 2.

Table 2. Geographical clustering #1: means of awarded EQLs per 1 million people

Clustering #1	Mean	N	Std. Deviation
Eastern	28.3	20	31.8
Western	10.6	19	14
M. East & N. Africa	20.1	4	33.2
Total	19.7	43	26.3

The differences seem to be clear-cut, with the Eastern countries achieving the highest score (28.3 EQLs), the countries of the Middle East and North Africa following with a good clearance (20.1 EQLs), and the Western countries achieving the lowest score (10.6 EQLs). The analysis of variance (one-way), however, reveals a statistically non-significant overall difference (F= 1530.2, df=2, p=.108, partial η^2=0.105), something attributed to the extensive standard deviations present in the sample. The post-hoc analysis (Bonferroni) has also yielded non-significant results, even for the 'Eastern-Western' pair of categories (p=.108). As a result, a small portion of the variance can be explained by the present clustering (partial η^2=.105).

In order to explore more potential trends, the countries have been regrouped in a different manner, this time with solely geographical criteria. The following clusters are thus analyzed: 'Balkans' (9 country-members: Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Greece, North Macedonia, Romania, Serbia, Slovenia), 'Baltic' (3 members: Estonia, Latvia, Lithuania), 'M. East & N. Africa' (4 members: Jordan, Lebanon, Tunisia, Turkey), 'Scandinavian' (5 members: Denmark, Finland, Iceland, Norway, Sweden), and the 'rest' of the countries (the remaining 22 countries). This different –and more expanded– clustering has yielded different results, with the means shown in table 3.

Table 3. Geographical clustering #2: means of awarded EQLs per 1 million people

Clustering #2	Mean	N	Std. Deviation
Balkans	46	9	39
Baltic	26.8	3	14.3
M. East & N. Africa	20.1	4	33.2
Scandinavia	7.7	5	14.3
rest	10.6	22	12.8
Total	19.7	43	26.3

The Balkan countries achieve the highest score (46 EQLs) with a significant difference from the rest of the categories. The Baltic countries are found in second place, achieving a relatively high score (26.8 EQLs), with the countries from the Middle East and North Africa following close (20.1 EQLs). The Scandinavian countries, however, achieve a much lower score (7.7 EQLs), while the rest of the countries achieve a slightly higher score (10.6 EQLs). This time, the

standard deviations are smaller compared to the previous clustering, something reflected in the statistically significant overall difference found in the variance (one-way analysis; F=2230.1, df=4, p<.001, partial η^2=.307). In this case, almost 1/3 of the total variation is explained by the employed clustering, which shows that differences in the performance of the countries are more easily found in smaller, more refined geographical clusters. It also means that the location of a country predicts its performance in the awards with a moderate probability of success.

Income (nominal GDP)

Another factor under analysis is the national income (nominal GDP), which is again correlated with the index of the awarded EQLs corrected for the population (EQLs per one million people). The nominal GDP reflects the living standards in a country, and is expected to explain some of the variance in the performance of the countries. The countries of the sample display large differences regarding the nominal GDP, as it ranges from $2,000 (Moldova) to $105,300 (Luxemburg). The mean GDP in the sample (43 countries) is $26,258, while the median GDP is $18,700. The linear correlation (Pearson) performed on the data reveals a moderate negative correlation between nominal GDP and the awarded EQLs (r=-.34, p<.05). In other words, there is a mild but significant tendency of countries with lower income to perform better in the awards. As to why this happens, it might have to do with the educators in these countries, who probably show a stronger desire to open up to other countries and come closer to (the rest of) Europe. Apart from that, it could also be a matter of educational prestige for those countries, as they enjoy international recognition through the awards. The latter is a very important reason, because it means that there must have been encouragement for participation and excellence at a central educational (or higher) level in those countries.

Education Index (UN)

The last factor refers to the United Nations Education Index, which is the ratio of mean years of schooling against the expected years of schooling, and reflects the quality of education in each country. From this respect, Albania displays the worst performance overall, as it features the lowest education index (.61:1) among the participant countries. On the other end of the scale, Norway features the highest index (.91:1), while the mean index of the sample is .78:1 and the median is .79:1. This index is highly relevant to the nature of the EQL awards –as they both refer to quality, so it is expected to explain a large portion of the countries' performance. The present analysis correlates Education Index with the awarded EQLs corrected for the population (EQLs per one million people). The linear correlation (Pearson) has been found to be moderately negative (r=-.356), something suggesting that there is a moderate tendency for countries scoring low in the Education Index ranking to perform better in the EQL awards. This goes contra to expectations, as quality education does not seem to generate more Quality Labels. This seemingly unexpected finding requires a plausible explanation. A reason could be found in the high levels of recognition that EQLs offer, something more desired by countries with lower educational quality and achievements. The publicity of the EQL awards and the international impact they make/have, seem to serve as an image maker for the countries that need it more. Another reason could be that excelling in eTwinning through obtaining an EQL does not add quality to the educational system itself, therefore, eTwinning seems to be rather detached from the real educational needs.

Discussion and conclusions

The distribution of the European Quality Labels awarded in 2020 provides significant insight into certain educational aspects. First of all, there is extensive diversity among the participant countries at several levels. From country to country, the performance varies substantially, something also reflected at teacher's level. Significant differences are also observed at the geographical level. Moreover, the EQL distribution is –to a certain degree–

correlated with country income and educational quality. In order to present a more concentrated image of the results, table 4 presents them in a visual manner.

Table 4. A visual (4-level color scale) representation of the results (darker shades: higher ranking; blanks: N/A)

Country	EQLs awarded	EQLs aw./ population	Teacher performance	Geographical clustering #2	Income (nom. GDP)	Education index (UN)
ALBANIA						
ARMENIA						
AUSTRIA						
AZERBAIJAN						
BELGIUM						
BOSNIA & HERZEGOVINA						
BULGARIA						
CROATIA						
CYPRUS						
CZECH REPUBLIC						
DENMARK						
ESTONIA						
FINLAND						
FRANCE						
GEORGIA						
GERMANY						
GREECE						
HUNGARY						
ICELAND						
IRELAND						
ITALY						
JORDAN						
LATVIA						
LEBANON						
LIECHTENSTEIN						
LITHUANIA						
LUXEMBURG						
MALTA						
MOLDOVA						
NETHERLANDS						
NORTH MACEDONIA						
NORWAY						
POLAND						
PORTUGAL						
ROMANIA						
SERBIA						
SLOVAKIA						
SLOVENIA						
SPAIN						
SWEDEN						
TUNISIA						
TURKEY						
UKRAINE						
UNITED KINGDOM						

The 4-level color scale in the table divides the 44 countries into 4 bands, where darker shades denote higher rankings, thus better results. The scale is applied to every quantitative parameter of the analysis (6 columns), showing how each country fares in each of them. It must be noted that, due to the negative overall correlations found in the last 2 factors (i.e., income and Education Index), darker shades correspond to lower income and Education Index respectively.

According to the table, there are countries with consistently high scores in the various factors, including Bosnia & Herzegovina, North Macedonia, Serbia, and Albania. On the other hand, there are countries with consistently low scores, including Denmark, Ireland, Netherlands, and Norway. Both these groups represent the best cases of usage of the employed factors as successful predictors of country performance. For example, the low income and Education Index (UN) of Bosnia & Herzegovina successfully predicts the high ranking of the country and its teachers in the eTwinning EQL awards. Vice versa, the high income and Education Index of Denmark, successfully predicts the country's low ranking in the awards. Even the geographical location of the countries –as a factor of analysis– successfully predicts the rankings of the aforementioned countries. For a number of other countries, however, including Greece and Jordan, the predictors fail to work as successfully. For example, with Greece belonging to the second highest/best band of countries regarding income and Education Index, the country is awarded a disproportionately higher number of EQLs.

The results also suggest that country size is not a good cue for the performance of a country. For example, Croatia features almost 350 times more EQLs than Lebanon, even though Lebanon has a larger population by more than 60%. In the same context, Turkey features almost 100 times more EQLs than Germany, although they have a similar population (84.3 vs. 83.8 million people). What is also found, is that eTwinning teacher-members display different degrees of commitment across countries. This suggests either less submitted projects per teacher or lower quality of the projects. Whether the quantitative or the qualitative dimension is prevalent, the fact is that cross-country differences are so pronounced, that teachers seem to approach eTwinning in a totally different way in some cases, as, for example, in the case of Azerbaijan versus Sweden. Regarding this factor, the main trend from the data suggests that the largest differences are observed at the upper end of the scale, meaning the countries with the best performance in the awards. So, the question remains as to why teachers in some countries take eTwinning more seriously than their colleagues in other countries. It could be a matter of personal or professional choice, or a matter connected to country-dependent factors. Table 4 (columns #2 and #3) attempts to provide an answer. In this context, combining the results of country performance (awarded EQLs corrected for the population) against teacher performance (EQLs per 1,000 teachers), the chromatic designations match in most of the cases, while most of the remaining cases feature a 1-band difference. This picture suggests that teacher performance generally matches country performance. Therefore, teacher performance could be indicative of a central orientation towards the awards, whereby less is to be attributed to personal/professional motivation and more to a national stance towards programs such as eTwinning. From this point on, the focus of the analysis is directed towards elements that correlate with cross-country differences. Thus, regarding the geographical factor, the analysis reveals that the first attempted clustering of the countries, which incorporates socio-political parameters (i.e., geopolitical clustering), fails to explain much of the observed variation of the EQL distribution. On the other hand, a solely geographical clustering has proved to be a rather reliable predictor of country performance (moderate correlation). In this context, a Balkan country is expected to achieve high ranking in the awards, while a Scandinavian country is expected to achieve relatively low ranking. Another reliable predictor is country income,

(nominal GDP), as there is a moderate level of probability, that countries with lower income fare better in the EQL awards. Furthermore, the quality of the educational system (UN Education index) also reveals a moderate tendency of countries featuring lower quality to fare better in the awards. The last two results combined, make the trend even more robust. Therefore, countries with higher income and educational quality are not expected to produce relatively more eTwinning projects qualifying for an EQL. On the contrary, what seems to happen, is an effort of the countries with lower standards to achieve a distinction at international level through eTwinning. The structure of eTwinning at national level, with the National Support Services having an important organizational role and –at the same time– being supervised by the Ministry of Education of the country, dictates that there must be a central coordination towards excellence in eTwinning. Therefore, eTwinning could serve as a tool of promotion or image making for those countries by placing them in the club of the educationally more advanced countries. In order to form a clearer image, a diachronic analysis of the EQL awards is necessary. In addition, if more European/international programs are investigated in future analyses, the conclusions will be more robust.

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An interdisciplinary educational intervention about self-perception of body image

Chatzinikola Charistoula
Phd Candidate at Department of Preschool Education, University of the Aegean
psed19006@aegean.gr

Diakosavva Emmanouela
Greek philologist, M.ed. in teaching Greek as a second/foreign language
emmdiak@gmail.com

Summary

In the context of school practice an interdisciplinary educational intervention of two different subjects, ancient Greek and Home Economics was conducted. The aim of the study was to examine the students' self-perception of body image and to evaluate the results of the educational intervention. This short-term intervention of six teaching hours included the Aesop's myth "The beauty is not everything" and pedagogical methods were applied. The students' body satisfaction was assessed by a questionnaire and the sample was fifty-five 12-year-old students. The mean score of satisfaction varied from "enough" to "very much", higher than previous research. Even though there was no statistically significant improvement of students' body image satisfaction, students enjoyed the learning process, the educational benefits of narration and realized the importance of positive body image. Clearly, further investigation is needed to assert the effectiveness of educational interventions on students' body image and how these could contribute to students' health literacy.

Keywords: body image, interdisciplinary educational intervention, body satisfaction, narration.

Introduction

Adolescence is the period of development that begins at the age of 10 until the young adulthood (24 years of age) and is the second more rapid growth after infancy. At that age obtained skills are substantial for adult relationships and roles as well as social and economic independence. During this stage of physical and psychological development and sexual maturation, the capacity for abstract reasoning is developed, as well as pursuit of identity (Das et al., 2017). Rapid body changes, physical and psychological, affect the body image and self esteem. The psychological changes may be culture specific and body image is affected by many factors, parental modeling, personal and cultural beliefs and mass media. At this age body image is very important and matters in decision making, in social relationships, selecting friends and establishing interpersonal relationships (Virendra Pratap Yadav, 2017).

Adolescence is a critical period for a person's self-esteem when body dissatisfaction could occur. Body dissatisfaction follows a continuum from normal unhappiness to excessive over occupation about appearance. This attitude could lead to behavioral disorders, like eating disorders and even depression and anxiety (Senín-Calderón et al., 2017).

Body image is a multifaceted dynamic concept and could be understood in terms of body appearance, body dissatisfaction, body recognition and is an important aspect of body-esteem, self-concept and self-esteem (Tylka & Wood-Barcalow, 2015).

Attitudinal body image consists of at least two dimensions, firstly the evaluation or affect, that refers to the body-image appraisals and satisfaction, and discrete emotional experiences towards one's body and secondly investment. Most researchers refer to body image as the body satisfaction or dissatisfaction (Cash et al. 2002. Kling et al, 2019). Body image experiences vary temporally and in situational contexts, even though most researchers focus on body

image as a stable trait (Cash et al. 2002).

Different elements construct the body image. There are two categories of body image, negative and positive**.** Negative body image is defined as distorted perception of shape, size and appearance, as well as feelings of shame and anxiety about the body. Conversely, positive body image is defined as the acceptance of realistic perception of the body and positive feelings about it, exactly the way it is (Tylka & Wood-Barcalow, 2015).

Torres (2021) studied several studies about the effectiveness on body image of school-based interventions and concluded that classroom-based interventions delivered by teachers have been insufficiently studied, despite representing low-cost interventions with high potential for dissemination. Yager et al. (2013) in as systematic review about classroom-based interventions suggest that at total of 15 programs, 7 were effective in improving body image immediately post-intervention, but less than 20% of all programs had sustained effects on body image at follow-up.

In Greek schools there is a lack of courses or interventions on students' body image. The aim of our study was to examine if an school-based intervention could improve the perception of the students about their body image. In this paper we investigate body image regarding students' satisfaction or dissatisfaction of specific parts of their body and other traits, like height and weight.

Hypotheses
- H0: Students have higher mean body satisfaction after the educational intervention
  H1: Students have not higher mean body satisfaction after the educational intervention
- H0: Girls have a higher mean satisfaction about body weight than boys before the intervention
  H1: Girls have not a higher mean satisfaction about body weight than boys before the intervention
- H0: Girls have a higher mean satisfaction about body weight than boys after the intervention
  H1: Girls have not a higher mean satisfaction about body weight than boys after the intervention
- H0: Boys have a higher mean satisfaction about height than girls before the intervention
  H1: Boys have not a higher satisfaction about height than girls before the intervention
- H0: Boys have a higher mean satisfaction about height than girls after the intervention
  H1: Boys have not a higher satisfaction about height than girls after the intervention

Methodology
Body satisfaction was assessed through Likert scale of 5 points (not at all to very much) for height, weight, body shape, waist, hips, stomach, face, arms, and shoulders (Vagias & Wade, 2006). Students' questionnaire before and after the intervention was based on Philippi & Leme (2018) research on body satisfaction. The educational intervention included 3 hours on Greek language lesson and 3 hours on Home Economics (nutrition and body image) lesson, applying educational material from EYZIN, a Greek national nutrition action. After the completion of the intervention students answered the same questionnaire. The research included a short-term educational intervention and a myth narrative about body image and body satisfaction.

Statistical analysis

The sample of the research were 55 12-year-old students attending at 1st grade of junior high school in Rhodes town, an island of Dodecanese in Aegean Sea in Greece. The distribution of sex was random and was consisted of 34 boys (61,8%) and 21 girls (38,2%) of total.

Continuous variables are demonstrated as mean with standard deviation (SD). Spearman correlation co-efficient (r_s) was used to investigate the correlation between the different variables of students' satisfaction (e.g., weight, height, etc.) both before and after the educational intervention. Furthermore, paired samples t-test was used to compare the means of different parameters of body satisfaction before and after the intervention. Independent samples t-test was conducted in order to compare the means of continuous variables of weight and height before and after the educational intervention in the different categories of gender variable. Moreover, exploratory factor analysis (EFA) using the Verimax rotation was conducted to examine the structure of the different variables and the internal reliability. The analysis of Cronbach's Alpha-Coefficient was performed to assess the reliability of the questionnaire. Test of normality was conducted using Shapiro-Wilk test as well as histograms, P-P and Q-Q plots. Levene's test was used to assess the homogeneity of variances in case of independent samples t-test was performed. Relationships with a p-value (p) <0.05 or <0.01 were considered as statistically significant. All reported p-values are two-sided. The data were analyzed with IBM SPSS software, version 23.
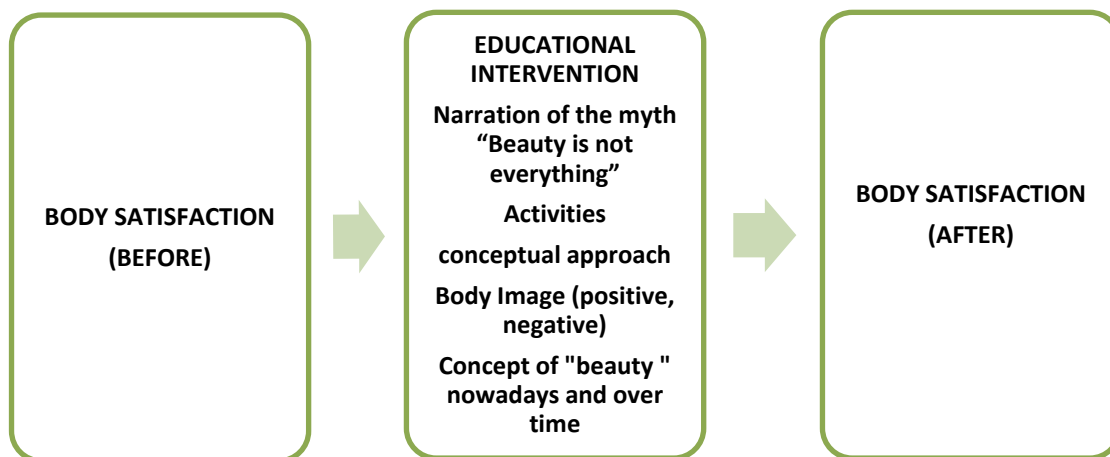
Materials and methods

The questionnaire included nine closed-format-type questions made with google docs and each student answered at his/her own computer at the computer laboratory. Apart from age that was the same for all students the questionnaire included sex and nine more questions "are you satisfied with your body weight?", "are you satisfied with your height?", "are you satisfied with your body shape?", "are you satisfied with your hips?", "are you satisfied with your stomach?", "are you satisfied with your face appearance?", "are you satisfied with you arms?", "are you satisfied with your shoulders?", all answered through Likert scale of 5 points (not at all to very much). During the educational process materials like notebooks, whiteboard and computers were used for the activities.

Ethics

Since the students were underage, parents gave their written consent for their kids' contribution to the educational research. The research was made in the context of the interdisciplinary teaching process of ancient Greek and Home Economics by the students' educators.

Educational intervention

The educational process we applied is based on cognitive-behavioural therapy (CBT), a treatment grounded in the idea that our perception influences how we think and behave, and that psychological problems are acquired and altered through learning processes (Tomas-Aragones & Marron, 2017). The idea is that students are given the option to identify, challenge and modify the problematic thoughts and behaviour patterns that distort their self-perception of body image. The students worked in groups of 3 in some tasks and alone in other, so that they can self-reflect. The research included three stages, the initial assessment of students' body satisfaction, the educational intervention, which included different approach of the subject, narration, activities and conceptual approach of body image and the final assessment.

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┌─────────────────────┐     ┌─────────────────────┐     ┌─────────────────────┐
│                     │     │  EDUCATIONAL        │     │                     │
│                     │     │  INTERVENTION       │     │                     │
│                     │     │  Narration of the   │     │                     │
│                     │     │  myth "Beauty is    │     │  BODY SATISFACTION  │
│  BODY SATISFACTION  │ ──► │  not everything"    │ ──► │                     │
│  (BEFORE)           │     │  Activities         │     │  (AFTER)            │
│                     │     │  conceptual         │     │                     │
│                     │     │  approach           │     │                     │
│                     │     │  Body Image         │     │                     │
│                     │     │  (positive,         │     │                     │
│                     │     │  negative)          │     │                     │
│                     │     │  Concept of "beauty"│     │                     │
│                     │     │  nowadays and over  │     │                     │
│                     │     │  time               │     │                     │
└─────────────────────┘     └─────────────────────┘     └─────────────────────┘
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Scheme 1: Scheme of educational intervention process and body satisfaction

Teaching ancient Greek language lessons include the conceptual deconstruction and meanings of myths. What could this myth teach us? What kind of interpretations could be made? In which way could this story be a pedagogical tool for self- reflection? Is it possible an educational intervention and a narration-analysis of a myth to improve the body image of adolescents? The messages of myths are the same overtime and students are challenged to involve with and deconstruct a myth from the original text. Aesop's myth is one of the oldest narratives recorded in mankind. The myth is called **"Beauty is not everything"** and was chosen, because it includes messages of inner and outer beauty and body image. The narration of the myth and the analysis of body image are associated with the physical, emotional and psychological changes that adolescents are dealing with. Important aspects of nutrition and puberty are highlighted at the subject of body image and nutrition in home economics and nutrition. Lack of self-confidence, overestimation of outer beauty, strenuous efforts to obtain the "perfect body" with possible health implications and even the frenzied preoccupation with fashion and appearance is typical at this age. On the other hand, non-recognition of spiritual gifts is common in contemporary society. Family, school, peers and social impacts are largely responsible of adolescents' lack of self-compassion (Pullmer et al., 2018). Body image is often distorted by the images that often mass media, social media, peers and fashion define as "attractive", "beautiful", "sexy" and "on fashion" (Puhl et al., 2013. Virendra Pratap, 2017). Furthermore, Fardouly et al. (2015) relate time spent on internet and social networking with negative mood and body dissatisfaction.

Narration is used as a tool of reflection that invites the learner to enhance thinking and doing, through interrogating, rediscovering and redefining the meaning of beauty (Chambers, 2003. Ercolino & Wampole, 2015). Before reading and evaluating the Aesops' myth the teacher presented in the classroom, as a motivation, paintings with a common theme of "beauty" during different eras of human history (Ancient times, Middle Ages, Renaissance, Baroque, recent years) or even project contemporary pictures from social media. Afterwards, there is a discussion and then students are divided into teams, and each team focuses on briefly presenting a painting to the classroom. As a matter of fact, there is a strong relevance between visual comprehension of works of art and vocal expression (Prokopenya, 2017). Throughout this procedure all principals of contemporary teaching methods, as task-based and team group are being reclaimed, so that students perceive that the notion of "beauty" is being revised and defined in different ways, according to the context.

After reading and evaluating the myth each group of two or three students, were asked to plot a narration story of "beauty". Indeed, they could use one of the available paintings, especially one with "too much information", and form their own story based on one of the paintings' subjects.

Other educational activities that were applied were: "find ten characteristics of self that are not related with the outer beauty and discuss this with your classmates". "Is the image of our self the same with the one that the others see?". Similarly, students divided in groups of two were working on the subject how would you describe your classmate, and how would you describe yourself. The purpose was to see the difference in self-perception and the way the others see us.

Results

In order to reduce the standard error, exploratory factor analysis was conducted, as well as a reliability test using Verimax rotation and Cronbach's alpha factor. This factor was 0.84 and shows a very strong correlation for 6 factors "satisfaction for weight", "body shape", "waist", "hips", "face", "arms". Likewise, Cronbach's Alpha factor was 0.774 and showed a very strong correlation of 2 factors "satisfaction for arms" and "satisfaction for shoulders". Explaining 66% of the variances, the Cronbach's alpha of 0.886 shows a strong reliability and correlation for 6 factors, after the educational intervention. The above components are correlated strong enough to be reliable and analyzed for correlation and these are "weight", "body shape", "waist circumference", "hips", "face", "arms" and "shoulders" (after the intervention). In a few cases there were missing values in the questionnaire **(Table 1)**.

Table 1: Cronbach's alpha factors and rotated component matrix

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
0.840	0.839
0.774	0.775
0.886	0.886

The mean scores of the sample about body satisfaction is >3 at the Likert scale, which means that all students before and after the intervention are "quite enough", "much" and "very much" satisfied with every part of their body (**Table 4**).

Table 4: Body satisfaction correlations before and after the educational intervention, (paired t-test)

Parameters	n	Before Intervention M	SD	After Intervention M	SD	Mean difference 95% CI	p-value
Stomach	52	3.40	1.30	3.50	1.39	-0.10 (-0.61, 0.42)	0.708
Height	55	3.53	1.10	3.42	1.24	0.11 (-0.35, 0.57)	0.637
Weight	55	3.25	1.35	3.33	1.23	-0.08 (-0.55, 0.41)	0.762
Body shape	55	3.58	1.12	3.51	1.33	0.07 (-0.37, 0.51)	0.740
Waist circumference	55	3.47	1.02	3.45	1.26	0.02 (-0.41, 0.44)	0.932
Hips	55	3.18	1.43	3.25	1.32	-0.07 (-0.60, 0.45)	0.781

Face	54	3.89	1.09	3.69	1.16	0.20 (-0.22, 0.62)	0.334
Arms	53	3.36	1.02	3.43	1.23	-0.07 (-0.51, 0.36)	0.727
Shoulders	55	3.69	1.10	3.84	1.21	-0.15 (-0.61, 0.31)	0.524

Abbreviations: M=Mean; SD=Standard Deviation; CI=Confidence Interval

To examine the correlations about students' satisfaction of different variables we used the Spearman correlation coefficient for non-parametric values before and after the intervention (**Table 2 and 3**). Height satisfaction is correlated to face, arms, and shoulders, body shape and hips at statistical significant level (at p <0.05 and p<0.01). The weight satisfaction is correlated to other variables stomach, body shape, waist circumference, hips, face, arms and shoulders, except for height satisfaction **(Table 2).** Face satisfaction is correlated to satisfaction to every other part of the body, included height, at a statistical significant level (at p <0.05 and p<0.01). Satisfaction for arms and shoulders was correlated to satisfaction to every other part of the body (at p<0,05 and p<0.01). After the educational intervention the correlations changed in two cases, weight - height and height - waist circumference and the correlation co-efficient was statistically significant at 0.05 and 0.01 **(Table 3).**

Table 2: Spearman correlation co-efficient before the educational intervention.

			stomach	height	weight	body shape	waist circumference	hips	face	arms	shoulders
Spearman's rho (r_s)	stomach	r_s	1								
		P-value	.								
	height	r_s	0.334*	1							
		P-value	0.015	.							
	weight	r_s	0.676**	0.221	1						
		P-value	<0.001	0.105	.						
	body shape	r_s	0.652**	0.346**	0.663**	1					
		P-value	<0.001	0.010	<0.001	.					
	waist circumference	r_s	0.476**	0.225	0.587**	0.547**	1				
		P-value	<0.001	0.099	<0.001	<0.001	.				
	hips	r_s	0.562**	0.276*	0.708**	0.605**	0.587**	1			
		P-value	<0.001	0.041	<0.001	<0.001	<0.001	.			
	face	r_s	0.476**	0.321*	0.469**	0.442**	0.440**	0.437**	1		

P-value	<0.001	0.018	<0.001	0.001	0.001	0.001	.	
arms r_s	0.385**	0.321*	0.365**	0.329*	0.417**	0.398**	0.448**	1
P-value	0.005	0.018	0.007	0.015	0.002	0.003	0.001	.
shoulders r_s	0.394**	0.364**	0.464**	0.384**	0.444**	0.487**	0.301*	0.599** 1
P-value	0.003	0.006	<0.001	0.004	0.001	<0.001	0.027	<0.001 .

*Correlation is significant at the 0.05 level; **Correlation is significant at the 0.01 level; r_s=Spearman Correlation Coefficient

Students' body satisfaction before and after the educational intervention

To examine the relationship of students' satisfaction before and after the intervention we conducted paired t-test analysis. Analysis of the means of the students' satisfaction before and after the intervention showed that for specific parts of the body the results were variant. The means of the variables of height (3,53 to 3.42 and p=0.637), body shape (from 3.58 to 3.51 and p=0.740), waist circumference (from 3.47 to 3.45 and p=0.932) and face (from 3.89 to 3.69 and p=0.334) decreased. The means of the variables of students' satisfaction for stomach (from 3,40 to 3,50 and significance 2-tailed 0.708), weight (from 3.25 to 3.33 and p=0.762), hips (from 3.18 to 3.25 and p=0.781), arms (from 3.36 to 3.43 and p=0.727) and shoulders (from 3.69 to 3.84 and p=0.521) increased. None of these differences were statistically significant and therefore we can claim there was not a statistically significant difference on students' satisfaction before and after the educational intervention (**Table 2 & 3**).

Table 3: Spearman correlation co-efficient after the educational intervention.

			height	weight	body shape	waist circumference	hips	stomach	face	arms	shoulders
Spearman's rho (r_s)	height	r_s	1								
		P-value	.								
	weight	r_s	0.285*	1							
		P-value	0.035	.							
	body shape	r_s	0.366**	0.616**	1						
		P-value	0.006	<0.001	.						
	waist circumf	r_s	0.290*	0.564**	0.591**	1					
		P-value	0.032	<0.001	<0.001	.					
	hips	r_s	0.476**	0.592**	0.599**	0.517**	1				
		P-value	<0.001	<0.001	<0.001	<0.001	.				
	stoma	r_s	0.493**	0.692**	0.727**	0.659**	0.630**	1			

	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	.		
face	r_s	0.458**	0.507**	0.708**	0.440**	0.549**	0.629**	1	
	P-value	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	.	
arms	r_s	0.472**	0.365**	0.405**	0.439**	0.515**	0.374**	0.460**	1
	P-value	<0.001	0.007	0.002	0.001	<0.001	0.005	<0.001	.
hip	r_s	0.484**	0.310*	0.608**	0.505**	0.466**	0.479**	0.561**	0.442*	1
S	P-value	<0.001	0.021	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	.

*Correlation is significant at the 0.05 level;
**Correlation is significant at the 0.01 level; r_s=Spearman Correlation Co-efficient

Students' weight and height satisfaction before and after the educational intervention

There is not a significant difference between the means of the two groups, boys and girls, as far as it concerns the level of their weight satisfaction (p=0.634, at p<0.05) before the educational intervention. There was not a significant difference between the means of the two groups, boys and girls, as far as it concerns the level of their weight satisfaction (p=0.677, at p<0.05) after the educational intervention (**Table 5).**

Before the intervention the mean of satisfaction for the body image of boys is 3.26 and for girls is 3.95. The independent t-test showed that since significance is >0.05 (0.077). Therefore, we can claim that boys and girls have a different height satisfaction at a significant level (p<0.05) before the educational intervention. (**Table 5**).

After the intervention the mean boys' satisfaction about height was 3.32 and girls' was 3.57. The independent t-test showed that since significance is above 0.05 (0,26), therefore we can claim that boys and girls have not a different height satisfaction at a significant level (p<0.05) after the educational intervention (**Table 5)**.

Table 5: Comparison for weight and height before and after the intervention between sexes, (independent samples t-test)

Parameters	Sex					
	Boys (n=34)		Girls (n=21)		Mean difference 95% CI	*-value*
	M	SD	M	SD		
Weight	3.32	1.32	3.14	1.42	0.18 (-0.58, 0.94)	0.634
After Weight	3.38	1.18	3.24	1.34	0.14 (-0.55, 0.84)	0.677
Height	3.26	1.08	3.95	1.02	-0.69 (-1.28, -0.10)	**0.023**
After Height	3.32	1.32	3.57	1.12	-0.25 (-0.94, 0.45)	0.477

Abbreviations: M=Mean; SD=Standard Deviation; CI=Confidence Interval

Discussion

Before and after the educational intervention the mean score of satisfaction varied from "enough" to "very much" for all students. The mean percentages of body satisfaction of this research were higher than previous research (Philippi & Leme, 2018). There was no correlation of sex and body satisfaction for height and weight before and after the educational intervention. Previous research claimed that girls are less satisfied of their body weight than boys at adolescence, probably because of the pressure exerted by different environments, including family, parents, partners, television commercials, fashion, cinema, and other social factors (Jiménez Flores et al., 2017. Dion et al., 2015). Body weight is mentioned as a critical

domain of self - worth because it is associated with low and unstable self-esteem, as well as negative body image-related consequences, including greater subjective weight, body shape anxiety and disordered eating (Virendra Pratap, 2017). Research review on body satisfaction for boys claim that a larger body image, which indicates strength and muscle is desirable for some and a slimmer image is desirable for others (Jiménez Flores et al., 2017). The parts of the body that are related to the weight, like stomach, hips and arms were reported to give the lowest score of body satisfaction (<3,5). On the contrary, face, shoulders and body shape had the highest mean of body satisfaction (>3,5). At this research no significant correlation was found for sex and body satisfaction for specific parts of the body before or after the educational intervention.

The short term interdisciplinary educational intervention of two subjects, Ancient Greek lesson and nutrition - home economics analyzed the issue of beauty and body image satisfaction and investigated its effect on students' body satisfaction. Adolescence is a crucial stage of psychological and physical maturation and important in establishing self-esteem. A healthy body image affects social and interpersonal relationships (Virendra Pratap Yadav, 2017). Body dissatisfaction and concerns about body image could lead to body image behavioral impairment in adolescence and depressive symptomatology (Senín-Calderón et al., 2017).

We aimed to investigate the possible positive effects of a myth narration and a short- term educational intervention on students' body image satisfaction. The effectiveness of the educational intervention didn't show a statistically significant increase on students' body satisfaction. However, students enjoyed this innovative type of learning through narration, learned about the myth and its extension, realized the body - image concept and its aspects in everyday life. Learning doesn't mean changing, as sociocultural context may influence a health behavior (Sheeran et al., 2016). This intervention, as a new interdisciplinary activity may contribute to the overall health education of students. Several promising school-based interventions have demonstrated improvements in body image and associated factors among adolescents in the school setting (Yager et al., 2013). School curriculum should encompass different teaching approaches about body image, as part of students' health literacy and well-being.

Conclusion - Future directions

This research showed that a short-term intervention of six hours' educational activities doesn't change the adolescents' body satisfaction at a statistically significant level. However, the idea of the interdisciplinary approach of intervention was engaging and enjoyable for students. Two different subjects, ancient Greek and home economics were blended into one and students participated in this actively. Narration was used as a tool of reflection that invites the learner to enhance thinking and acting, through interrogating, rediscovering, and redefining the meaning of beauty. Clearly, the narration of an ancient myth and its extension is didactic. This research could initiate educators to apply interdisciplinary approach at school practice.

Thus, school curriculum in Greece should include more subjects and interventions about body image to promote adolescents' self-esteem and health literacy. Teachers involved in school -based programs could widely disseminate effective body image programs, to the contrary to the involvement of researchers and specialized interventionists, as in this case it would be expensive, labor intensive, and ultimately, not sustainable. We propose that strategies and training programs should be applied to motivate schoolteachers in Greece to receive education about body image interventions.

Sociocultural context is a major influence on adolescents' behavior and self-perception. Further investigation should be conducted to evaluate the effectiveness of educational interventions, both short and long-term, involving educators and peers, because they consist

major possible factors that affect students' body image. Finally, more research about school-based programs in Greek population should be conducted.

Limitations

As for limitations it could be claimed that the sample was selected from only one class in junior high school in the Rhodes town of Greece, not by other classes around, in the context of the educational practice.

Competing interests

The authors declare that they have no competing interests.

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Students in high school put the theory into practice by recycling materials and waste

Lazaris Dimitrios
Biology teacher, PhD, Dpt. of Medicine, University of Ioannina
dlazaris@yahoo.com.gr

Sismanidis Ioannis
Teacher of Greek language, Dpt. of Secondary Education, Ed. Directorate of Drama, Greece,
sisman21@gmail.com

Manousi Aikaterini
Teacher of Greek language
aikaterinimanousi27@gmail.com

Theoharidou Anna
Substitute Art Teacher for primary education
fratakatrana@hotmail.gr

Drosos K. Vasileios
Professor, Dpt. of Forestry and Management of the Environment and Natural Resources
vdrosos@fmenr.duth.gr

Abstract

Recycling is the process of reusing various materials that are no longer usable to humans in their current state. Waste is generally transformed into raw materials from which new goods are made in this process. The aim of the research was to investigate the relationship of the students with recycling in theory and in practice. Specifically, students were asked to collect recyclable items in bags for a two weeks period and to classify them according to the material they were made, after recording them in kind and number. Research shows that the largest share or part of recycled items are plastics, in a percentage 46%, the papers 37%, glasses 12%, electrical devices 4% and tinplate occupies a very small percentage of 1%. Also, the recorded recyclable products differed slightly based on the students' gender with a few exceptions. Through the implemented project for recyclable products, students learnt about the role and relevance of recycling in the natural world, and their research increased their understanding and respect for the environment.

Key words: environment, recyclable items, viability, protection, respect

Introduction

Recycling of materials and waste is the process of reusing, in part or in whole, anything that is the direct or indirect product of human activity and that is no longer suitable for man in its current state. The design and implementation of integrated systems is required by modern concepts and practices for municipal solid waste management, with the main aims being sustainability and ecologically effective management. Useful materials such as paper, glass, aluminum, plastic, metal, and wood must be used either by reusing them or by recycling and reusing them, saving a large amount of raw resources and energy. Modern living has "enriched" municipal solid garbage with new streams of unique waste that require separate (alternative) handling in order to conserve vital resources. Furthermore, the number of landfills containing hazardous compounds found in this garbage might be minimized (Waste

& Resources Action Programme, 2010; Shinkuma and Managi, 2011; United Nations Environmental Program, 2015).

Recycling dates to the Bronze Age (about 3300 BC to 1200 BC), when it was first used (Harding, 2000; Krause, 2014; Bronzization, 2016). Various metal artifacts had been melted during the period in order to create new products. The scenario altered due to the industry's rapid advancement, which made recycling more challenging. At a recycling conference in 1970, it was resolved to label all recyclable items with a logo, and November 15 (since 2009) was designated as "Recycling Day" (Labrecque, 2018).

The Greek Parliament approved Law 2939 in August 2001, which specifies the criteria and circumstances for the alternative or sustainable treatment of packaging materials waste. Furthermore, the legislation defines the primary axes that govern the management of other waste (waste electrical and electronic devices, batteries, accumulators, end-of-life vehicles, used tires, used lubricating oils, debris, etc.). Many years later, a law incorporated into Greek law establishes the non-profit nature of collective alternative management systems and the mode of operation of E.O.E.D.S.A.P. (National Organization for Alternative Management of Packaging and Other Products), while Greece is recognized as a pioneer in backward waste management methods (Sifakis and Haidarlis, 2004; Law 4042/2012; YPEKA, 2012).

Regarding the role of recycling in education, it is critical to emphasize that children as students must understand the value of recycling, its advantages, and how to do it from an early age. Primary and secondary school students, for example, learn about the natural world through scientific courses such as Biology and Chemistry. Also significant are school projects including recycling via an ecological framework and aimed at raising students' environmental consciousness (Luan et al., 2020). According to research, attitude, subjective norm, and perceived behavioral control have a positive and substantial association with students' desire to recycle. Furthermore, students' intentions to recycle are favorably associated to their actual recycling practice (Thoo et al., 2021). In addition, numerous research have found that increasing parental environmental knowledge levels contributes to an increase in student awareness. Students' levels of knowledge regarding environmental education have already been proven to increase because of parent-child dialogues about environmental concerns (Ablak and Yeşiltaş, 2020).

This paper analyzes the interaction between students and recycling from both an educational and experiential standpoint.

Materials and Methods

Phases of project

The research action took place out by first-grade students from Vonitsa's Vocational Lyceum (EPAL) in Greece and consisted of three separate phases over the course of a four-week program. During phase A, the project's teacher investigates and records the students' pre-existing knowledge and attitudes toward the environment, ecological concerns as well as recycling as an institution. This was achieved with a 30-item questionnaire distributed to students by the teacher. Based on the students' answers, the responsible teacher of the project adapted his introductory speech and information brochures on the ecology and recycling to the needs of the students involved. The presentation on the environment and recycling took place with PowerPoint and videos. The structural sections of the lecture included waste management issues in Greece and Europe (recyclable items, uncontrolled landfills, fires and pollution) and best practices/benefits for packaging recycling. At the end of the presentation the students showed significant interest in the ecological practice of recycling by asking questions to the teacher about the recycling process in their city and how it can be made more efficient. In phase B, the population of sixteen students in the class was separated into four groups of four. The responsible teacher informed the students about the process of the program by distributing questionnaires, to each group, for recyclable household items with details on their type and quantity (Table 1). For two weeks, the students gathered

various recyclable objects from their homes. The students completed the questionnaire using the objects they had collected at the end of the second week. Phase C included collecting the data from all of the students involved in a summary table, which was then evaluated further for analysis. The responsible teacher of the program with an informative seminar demonstrated the process of static data analysis. The students with the support of the teacher analyzed the data which they presented in the form of data tables and diagrams. The procedure took place in the school's lab at the end of the week (Figure 1). The results of the research were presented by the students in the school community in the school amphitheater. The presentation was opened with the introductory lecture from the responsible teacher while all the students involved presented the results through data tables and diagrams. The lecture was attended by the teaching staff of the school and the students of the other classes. The research activity was also posted on the school blog.

Table 1. The questionnaire of recyclable household items which was filled out by students.

RECYCLABLE MATERIAL	TYPE OF RECYCLING	NUMBER
Paper	Disposable paper	
	Shopping bags	
	Food packaging	
	Juice packaging	
	Food containers	
	Wraps	
	Books/magazines	
	Brochures	
	Device cartons	
	Various papers	
Glass	Soft drink bottles	
	Beer/alcohol bottles	
	Medicine bottles	
	Glass food jars	
	Bottles for Spring Water	
Aluminum	Soft drink cans	
	Beer cans	
	Canned food	
	Food pans	
	Aluminum food container	
Tinplate	Tins of oil/olives	
	Containers for paints, solvents	
	Aerosol cans	
	Bottle caps	
Plastic	Soft drink bottles	
	Beer/alcohol bottles	
	Medicine bottles	
	Food containers	
	Plastic wraps	
	Packaging material	
	Bottles for mineral water	
	Shopping bags	
	Garbage bags	
	Detergent bottles	

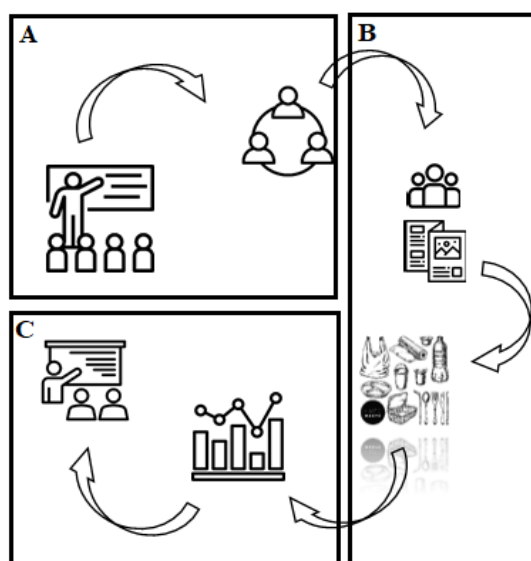|	
	Bottles for shampoo, shower
	Transparent membranes
	Packaging for hamburgers
	Food jars
	Straws
	Dairy cups, sweets
	Various caps
Electrical devices	Batteries
	Mobile phones
	Radios/cd player
	TV

Figure 1. The phases of the student recycling project.

Statistical analysis of data

The data was statistically processed using the SPSS 21 (Statistical Package for Social Sciences) software. This program was chosen because it is a versatile package that supports a wide range of analyses and output formats, and it is widely used in academic and corporate settings. SPSS has numerous advantages, which is why it is selected by many students in bachelor, graduate, or undergraduate programs for the preparation of diplomas or projects. The most significant advantage is that the user can import from a variety of sources, including the 'Excel' spreadsheet. Furthermore, numerous statistical tests are built into 'SPSS,' and the results are simple to interpret. The data tables are shown fast and readily, and the application can be expanded further if the user so desires (Arkkelin, 2014).

In statistics, the Pearson correlation coefficient is a measure of linear correlation between two sets of data. It is the ratio between the covariance of two variables and the product of their standard deviations; thus it is essentially a normalized measurement of the covariance, such that the result always has a value between −1 and 1. As with covariance itself, the measure can only reflect a linear correlation of variables, and ignores many other types of relationship or correlation. Data from recycling items were employed as random variables and their association with the sex of students was investigated using the Pearson correlation coefficient (Dowdy & Wearden, 1983).

Clustering techniques play a very central role in various parts of data analysis. They can give important clues to the structure of data sets, and therefore suggest results and hypotheses in the underlying science. Many of the interesting methods of clustering available

have been applied to good effect in dealing with various data sets of interest (Facundo & Memoli, 2010). The Hierarchical Clustering Technique, also known as DIANA (DIvisive ANAlysis Clustering) is an algorithmic approach to find discrete groups with varying degrees of (dis)similarity in a data set represented by a (dis)similarity matrix. In an iterative process, the pairs of items with the highest similarity values are identified and merged into groups. Once an item enters a group, it cannot be considered as isolate anymore – what is considered for the next merger is then the newly formed group. This process is repeated until all items have been merged into one group. These groups are hierarchically organized as the algorithms proceed and may be presented as a dendrogram and has to decided how many clusters of the dendrogram reflects most revealingly. Many of these algorithms are greedy (i.e. the optimal local solution is always taken in the hope of finding an optimal global solution) and heuristic, requiring the results of cluster analysis to be evaluated for stability by, for example, bootstrapping (Efron, 1979) procedures (Fraley & Raftery, 2002, Naeni et al., 2016). For the project, this analysis was a useful tool in our analyses for categorizing recyclable things by both sexes of the students.

Results and discussion

Based on the materials were collected and recorded by the students, the type of material that predominates in the total of recyclable materials is plastic (46%) and paper (37%), with glass occupying the third place (12%). The electric appliances are followed at a rate of 4%, and a tinplate at a rate of 1% (Figure 2).

Disposable papers (e.g., paper towels, kitchen papers, paper towels, etc.) are the most common paper recyclable item (Figure 3a), accounting for 34%, followed by food packaging and paper shopping bags (14%-15%). The latter demonstrates an increasing inclination to eat fast-food restaurant meals, mostly among students, as well as the frequency of purchases. The papers from books or magazines, as well as brochures, were combined at a rate of 13% (= 12% + 1%, respectively), indicating readiness for instructional material. Juices and their derivatives also play an important role in the diets of students and their families, as seen by the proportion of their packaging (11%). The remaining 13% includes different papers, wraps, and other items. Glass, which occupies third place among recyclable items, reflexes more about students' and their families' purchasing habits. Soft drinks, which currently play a significant part in the Greek table and in the preferences of young students, rank top in terms of preferences with a percentage of 62%. Mineral water bottles account for 14% of the total, while beer/alcohol bottles account for 10%. Glass packaging for medications and food is in the last place accounting for 7% of all purchases (Figure 3b).
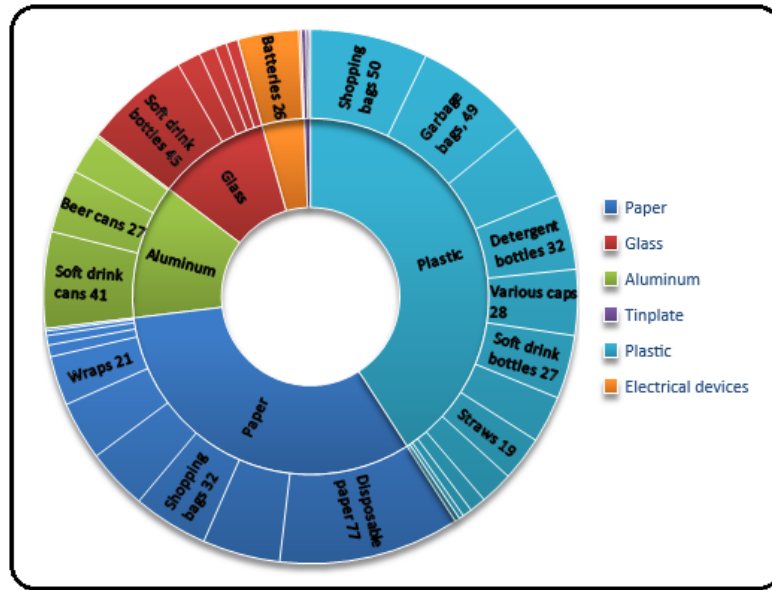
Figure 2. The recyclable household items were recorded by students.
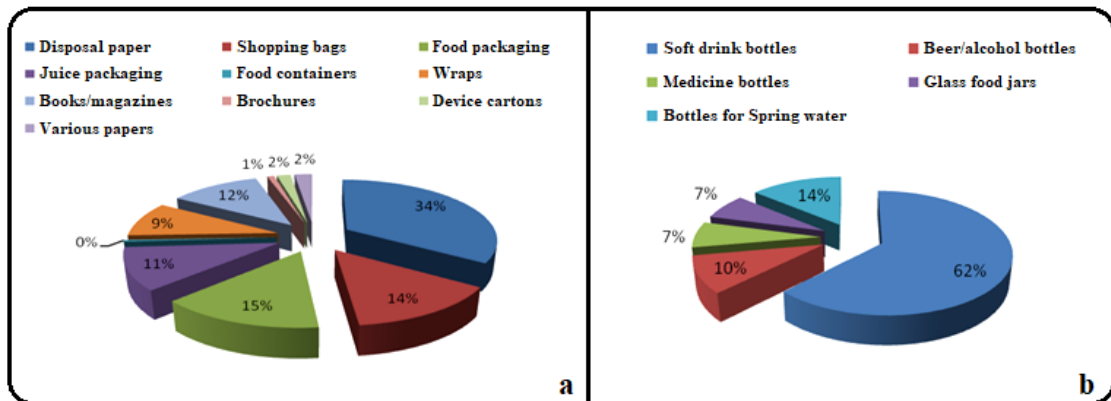

Figure 3. The most frequent types of paper (a) and glass (b) materials as recorded by the students.

Our results indicate a strong preference for soft drinks and beer in an aluminum can packaging, which accounts for 79% of preferences, while cans and food jars account for 21%. Our results clearly show that in the soft drink market, students' preferences converge (Figure 4a). Students and their families choose various tin-type aerosol cans at a rate of 50%, i.e. half of all recyclable products of particular chemical composition. The rest is occupied by oil/olive cans and various bottle caps (Figure 4b). Plastics are used by consumers for garbage storage and transportation of goods and products from department stores, accounting for about 34% of recyclable plastics. Bottles of soft drinks, water, beer, and other alcoholic beverages come in second with 21% of the consumer population's choices. Next are the plastic bottles for detergents at a rate of 11%. Plastic caps, medicine bottles, wrappers, straws, and dairy product cups account for the remaining 34% (Figure 4c).
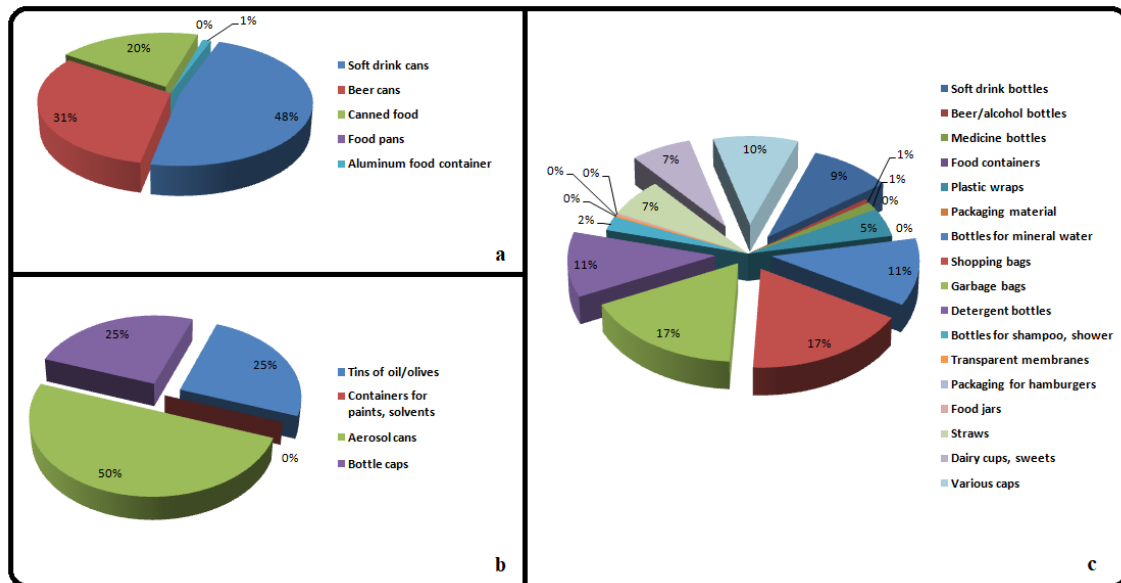
Figure 4. The most frequent types of aluminum (a), tinplate (b) and plastic (c) materials as recorded by the students.

The great majority of electrical appliance goods (96%) are batteries from various products, with the remaining 4% coming from TV appliances or their derivatives. Furthermore, because the data is limited and does not provide useful statistics, these results are obviously non-representative. Because recyclable electrical equipment has a wide range of functions and applications, the consumption picture in Greek households is quite different (Figure 5).
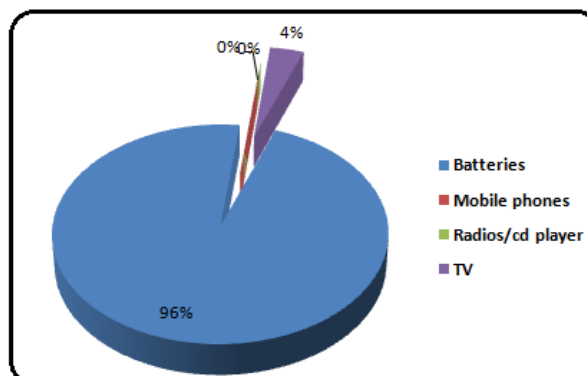
Figure 5. The most frequent types of electrical appliance goods as recorded by the students.

Plastic (41%) and paper items (32%) are the most commonly used materials in all-recyclable home products, according to data had provided by students. Aluminum items come in third place with a percentage of 12%, while the glass items (10%) and electrical devices (4%) come in second and third place, respectively. The data for tinplate items are strongly limited and do not provide helpful statistics results. It's conceivable that these numbers to be unrepresentative (Figure 6).
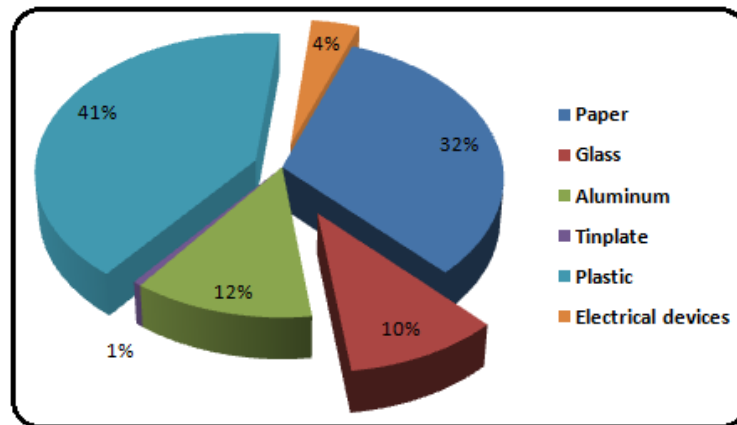
Figure 6. The most frequent types of recycling items as recorded by the students.

The processing of data indicates that the type and number of recyclable products were recorded from both sexes of students have an average correlation (0.530) which is statistically significant (p<0.05). This fact is reinforced by the control of the associated samples of recyclable materials by the students (schoolboys and schoolgirls) through the control of the Wilcoxon signed-rank test which do not differ statistically significantly, Asymp. Sig. (2-tailed)<0.904. This reflects the fact that recyclable products differed slightly based on the students' gender (Figure 7) with a few exceptions (various caps, soft drink bottles, garbage bags, beer cans).
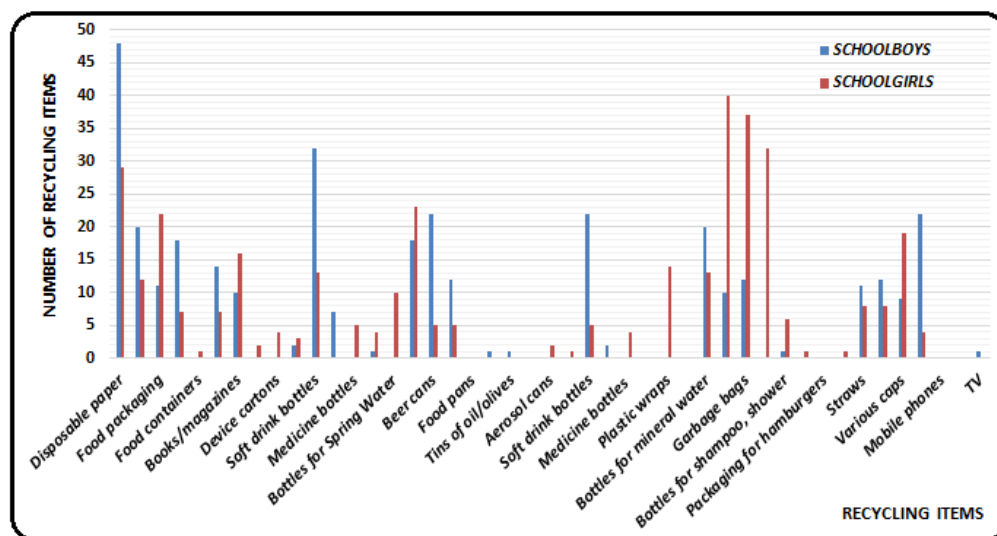

Figure 7. Type and number of recorded recycling items by students (Blue: schoolboys, Red: schoolgirls).

To estimate the frequency of usage in groups, the recyclable items collected by the students were grouped using the Hierarchical Cluster Analysis method (Figure 8). The results reveal that the materials were categorized into two basic groups. The first team includes recyclable objects made of paper, aluminum, plastic, and electrical equipment while the second group includes paper, glass and plastic.
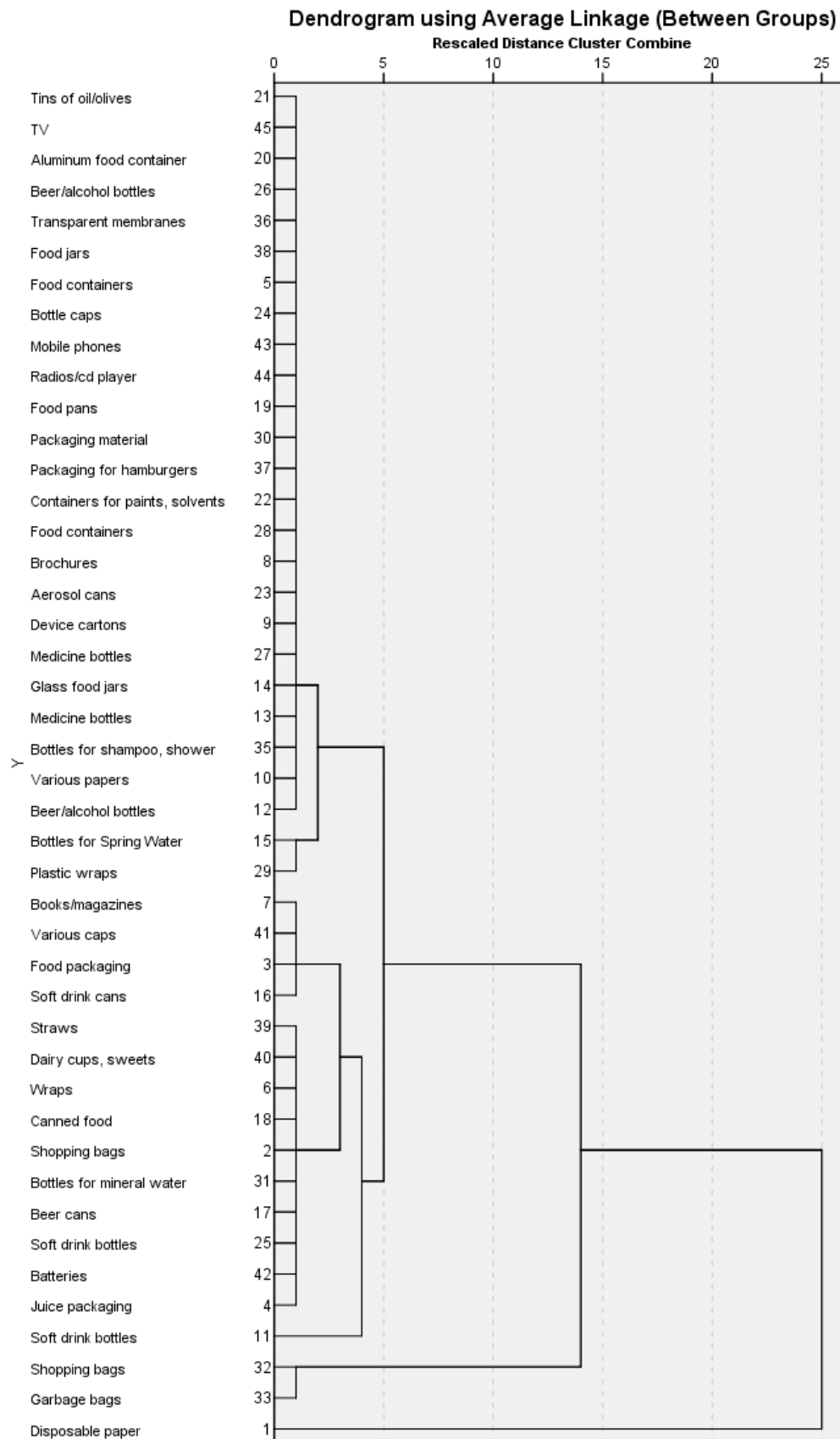
Figure 8. Dendrogram shows the relative similarities the type and number of recyclable products were recorded by students.

Conclusions

During the four months of school, students implemented a project for recyclable materials, allowing them the chance to learn about the function and importance of recycling in the natural environment. The students, as active members of the project team, were able to observe the "journey" of recycling packaging materials in a creative way. In the first phase, the collection and categorization of recyclable items have instilled in students a sense of responsibility as a future generation in terms of waste management. In the next part of the recycling project, the students, with great interest and enthusiasm, learned about the recycling process and separated recyclable materials so that they could recycle themselves in order to raise awareness and adopt this environmental behavior. By categorizing and statistically processing recycled materials, students realized that consumer goods preferences reflect the local population's consumer habits for basic goods. An obvious example is in the area where the students live, "spray" products are preferred, either for cosmetic reasons (deodorants) or for health and safety reasons (cleaning and disinfection products). The students demonstrated that plastic and paper are the most prevalent recyclable materials among all recyclable materials. The research also showed that gender does not have a significant effect on the consumption habits of students and their families. A limiting factor may be the low number of students and the recyclable materials or even the period at which the research was conducted.

The present project was based on the following learning theories: (a) sociocultural, because knowledge is built via interaction, (b) collaborative learning theory, since students learn to work collaboratively by being divided into groups and realizing their duties and tasks, (c) social building occurs as students gain information and actively participate in group activities, (d) critical reflection, as students think critically and build critical thinking through our activities, (e) open learning theory, since students choose the location, time, and rhythm in which they will study the subject.

Environmental awareness in general, and recycling in schools in particular, are critical issues in the educational community. The scholastic program Recycling in Primary and Secondary Schools is a movement whose fundamental objective is to sensitize the entire school community to the burning issue of recycling, which is not often highlighted. In each school unit, the program will be developed will have the objective of educating, raising awareness, and activating both students and their families on the issues of waste management and recycling in order to protect the environment.

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School performance anxiety in adolescents

Ioannidis Nikolaos

Phd, Sociology Teacher, Directorate of Secondary Education of Magnesia,
nioand@yahoo.gr

Abstract

This study aimed to investigate anxiety in senior high school adolescents, and particularly the stress related to school performance and examination requirements in the current educational system. We hypothesized that examinations, and particularly the Greek school final examinations, cause intense stress to students, because they are directly related to school performance. Adolescents are expected to select an academic sector and a future profession, a remarkably stressful situation combined with adolescence itself. After defining the concepts of anxiety and school performance, we examined and analyzed the correlation with the attitudes of parents, educators and peers to reach to conclusions. The results of this study provide some evidence that our initial hypothesis was confirmed, although differences were recorded between students. The main factor of adolescent anxiety is the feeling of not possessing the adequate skills to fulfill the requirements of the examination. Their self-esteem was affected by their performance in the examinations and their success in examinations was extremely associated because they were affected by the criticism from their social environment and family.

Keywords: anxiety levels, school performance, adolescents, final examinations.

Introduction

The Greek term "άγχος", deriving from the ancient Greek verb "άγχω" which means "strangle" or "suffocate," describes an unpleasant feeling of stress, a suffocating pressure to the throat (Plykandrioti, 2014). The vernacular term "stress" also refers to this feeling of pressure. Anxiety is a common undisputable fact in human life's that constitutes a universal cause of poor academic performance among students worldwide (Dawood *et al.*, 2016). Test anxiety, in particular, refers to the specific issue of anxiety related to achieving high test scores in educational careers and as it was previously shown in literature that type of anxiety has a negative impact on school performance (D'Agostino *et al.*, 2021).

Examination performance anxiety represents a distinct form of anxiety, studied systematically since the 1950's. Its most recent versions are based on the cognitive interference model, according to which anxiety causes reactions irrelevant to the solution of the school task, interfering and affecting the course of solution, and thus the performance quality (Metallidou, 1995). These reactions are combined with the concern for a potential failure. The stimulus triggering anxiety is related to the perception of evaluation, the underlying concern and fear of a current or future crisis (Zagklara, 2014).

School performance encompasses the actions and activities a student engages in at school, including the reproduction and utilization of information acquired during the educational process. The term refers to the obligation to produce work in the classroom and focuses on individual student learning and development. School performance is related to cognitive characteristics and particularly to the notions/knowledge and skills to use them in arduous/challenging situations. Student performance is among the essential subjects of the educational community and concerns all the interested parties in the learning process, while the complexity to interpret is attributed to its inextricable association with the school objectives and values (Vasiloudis, 2010).

However, school performance is associated and directly dependent on anxiety, which may function as a stimulating or an inhibitory factor. The positive dimension of anxiety appears as

hyperstimulation assisting students to perform even under stressful conditions (Zagklara, 2014). Thus, the "natural" or "creative anxiety" stimulates the students preparing for examinations, to help them work and organize their studying, minimizing the risk of failure and increasing the possibility for positive outcome. Conversely, "pathological anxiety", which is exaggerated in relation to the stimulus inducing it, often affects the ability to respond to daily activities. It is related to internal insecurity and conflicts, rather than environmental factors ('Positivus', 2011).

Nevertheless, the causal association between anxiety and performance remains to be fully defined/determined. Studies have shown that scholar failure may be at the origin of the vicious circle of anxiety-performance-failure (Zagklara, 2014). There are references stated that students face two types of anxiety, a general test anxiety, and anxiety of a specific teaching subject, usually witnessed at school (Chishti, & Rana, 2021). Other researchers mention that the participants' anxiety levels do not exceed the level which would have a negative impact on their academic results (Tóth, A., 2021).

Adolescents with high levels of stress often perform more poorly than those who manage it. Stressful situations limit the capacity of the working memory to follow the required procedures to process information and control its execution. The working memory describes a system of short-term memory controlling, regulating and storing specific information. In case the information stored in the working memory is disturbed, performance may be impaired due to distraction because the individual focuses on its anxiety rather than information management. Students experiencing strong anxiety tend more to experience memory loss, are incapable of processing the knowledge taught and associate it with reality (Zagklara, 2014).

Background

The role of family in school performance

School performance, particularly in adolescence, may be affected by a series of endogenous or exogenous factors. Endogenous factors include the students' personal characteristics, attitudes and habits, while exogenous factors refer to their developmental and social environment (Vasiloudis, 2014). The main exogenous factors include parents' participation to school life, follow-up of the students' efforts and parental bond. Autonomy, awareness and sense of adequacy in adolescents may represent the most essential prognostic elements of school success (Zagklara, 2014).

Furthermore, freedom and autonomy contribute markedly as a reference framework of parental behavior toward adolescents. Parents should respond to the adolescent need for freedom, autonomy and self-expression, by showing acceptance and flexibility. The sense of being trusted and treated as responsible and mature individuals increases markedly adolescents' self-esteem, thus ameliorating their school performance (Makri–Mpotsari, 2008), because they feel more capable and confident about their abilities (Zagklara, 2014). Conversely, parental behavior control and regulation via orders, instructions, or even threats of deprivation of parental love, pressures adolescents to yield specific results such as school success. Parents who control their children behavior without intervening in their autonomy tend to have more adapting adolescents, with good social skills, less behavioral issues and less depression. Moreover, supportive parents are more likely to positively evaluate the academic abilities and school performance of their children. Students with supportive parents internalize the need for school success while showing strong persistence and resilience to school requirements (Zagklara, 2014).

The type of parental bond affects markedly the students' results and school performance. Parental involvement promotes school success in adolescents when occurring within a strict child rearing framework. Studies have shown that child rearing characterized by high acceptance, supervision and psychological autonomy leads to better school performance and

stronger commitment to school. Children raised in authoritative family environments may show fairly good behavior but more limited social skills; they tend to suffer from anxiety, depression, low self-esteem and present psychosomatic symptoms such as headaches and dizziness. In contrast, children from tolerant families have higher self-esteem, lower rates of depression and anxiety, but are more likely to get involved in problematic situations while showing poor school success. Students with disengaged parents have more problems and poor academic achievement. (Zagklara, 2014)

The role of educators in school performance

Differences in school performance had been long attributed to the presence or absence of intellectual ability, rather than to external factors. More recently, it has been reported that the social background of students affects their school performance to a great extent. However, it appears that, in addition to family, school contributes equally in shaping school performance (Theodosiadou, 2013).

Educators are among the most important assets of the education system, contributing to the learning process together with the students. Professors' knowledge and behavior determine the quality of the educational outcome and affect students' performance. Therefore, the quality of teacher-student relationships is of paramount importance; mild education practices are more likely to stimulate students to perform their school duties. Thus, good school performance is motivated by both family and educator behaviors. (Theodosiadou, 2013)

Within the context of educator-student relationships, students seek to satisfy their basic needs, such as security, love, participation in the community, but also differentiation, independence and need for self-determination. The last three needs, those of self-regulation, determine students' self-awareness and self-esteem. Thus, educators' attitudes and personality affect the developing relationships within the classroom and students' self-awareness. Educators should be aware of the importance of self-esteem for the learning process and behavior of students (Rapti, 2003). Research has shown that positive comments and encouragement for classroom participation by educators affects students' self-esteem, creating a relationship of commitment to school and educational work (Zagklara, 2014).

The role of peers in school performance

Studies have reported a correlation between peer relationships and school performance. Students rejected by their peers show higher rates of school failure, reflected in low grades, poor performance in examinations and higher rates of dropout. Additionally, students who are victims of school violence and bullying show reduced academic performance and behavioral problems (Vasiloudis, 2014).

Inter-student relationships contribute markedly to the fulfillment of students' academic, social, and emotional needs, and the shaping of self-perception. Peer acceptance is of particular concern to students and affects their self-esteem and behavior accordingly. A training program on students' interpersonal skills, conducted by O'Neil Tremblay, has revealed that children's self-esteem and interpersonal relationships are directly related. Furthermore, another study has demonstrated the correlation between self-esteem, social prestige and academic achievement. (Rapti, 2003)

Friends play a positive role in the socio-psychological health of adolescents. Most adolescents seek to discuss their choices with peers beforehand, avoiding making impulsive decisions. Adolescents choose friends based on characteristics and talents they admire, which in turn motivates them to succeed and act similar. They may be encouraged by them to study efficiently for school and think creatively. Friends with high school achievement affect positively adolescents' satisfaction with school, educational expectations, grades and test scores. Students with friends who like school show higher grades and interest in school, while minimizing the possibility of not graduating (Zagklara, 2014).

Finally, the impact of friends is a moderating factor, reducing or increasing the positive influence of parents. Adolescents whose friends and parents support academic achievement perform better than those receiving partial or no support (Zagklara, 2014).

Research data

Initial hypothesis

We hypothesized that examinations, and particularly the Greek school final examinations, cause intense stress to students, because they are directly related to school performance. Entrance examinations to higher education represent an opportunity for adolescents to prove to themselves and others their ability and worth; thus, they display high levels of anxiety. The fear of disappointing their close environment and insecurity of not meeting their expectations induce negative thoughts and anxiety about their final performance.

Methods

A questionnaire form was created in Google Drive and distributed electronically to high school students of Volos and Larissa, via email, social media, secondary school teachers' websites and, in some cases, within the school premises in the laboratory of the computer science course.

The form included an introduction stating the purposes and the framework of the study, while highlighting the protection of the participants' anonymity at the submission of the questionnaire. All answers were mandatory; however, no answer was considered correct or wrong. A total of 100 questionnaires were completed and analyzed. The sample was stratified according to the gender and to the students' school performance, in order to achieve a better understanding on their attitude towards final exams.

The questions included in the questionnaire were common for all students and were grouped according to the following themes:
1) Students' relationship with the school environment
2) Extracurricular activities not related to school and examination requirements
3) Performance in the Greek school final examinations
4) Students' attitudes toward school and examination requirements

After collecting the questionnaires and performing an initial analysis of results, we carried out interviews with 12 students, six girls and six boys, from the 2nd grade of the 4th Senior High School of Volos. We deemed it good to define in more detail the way students think and what are the particular characteristics that differentiate stress in terms of school performance by adding open ended questions. We tried to base the research on the data of the Greek experience by taking into account at the same time the general theoretical framework that concerns the subject (D'Agostino, *et al.,* 2021; Bagana, *et al.*, 2011: Lazaratou, *et al.*, 2013). They were all asked to comment on a part of the study results and express their views regarding examinations, anxiety, family and other factor's impact. The interviews were focused on estimating the critical factors which influence student psychology either negatively or positively by delineating the stressful conditions during the final exams and the extent of that influence to students' self-esteem.

Results

Questionnaires

Most students were not satisfied with school. Most participants (36%) moderately enjoyed attending school, while 24% and 18% reported enjoying it slightly and not at all, respectively. Only five of 100 adolescents were very satisfied with their school. This result provides an initial insight on how students feel about school, and what that entails (Picture 1).
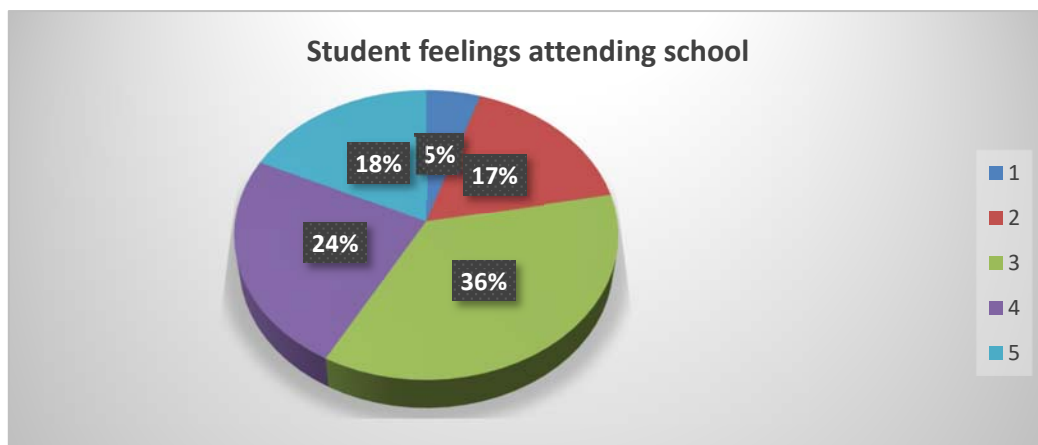
Picture 1. Students' feelings about high school

Although students were unhappy with school, they maintained good relationships with their peers. Thirty-eight (38%) reported they had very good, 29% average, and 27% extremely good relationships with their classmates. Similar, most students have below average relationships with their professors; particularly, 39% have very good, 31% average, and 15% extremely good relationships (Picture 2).
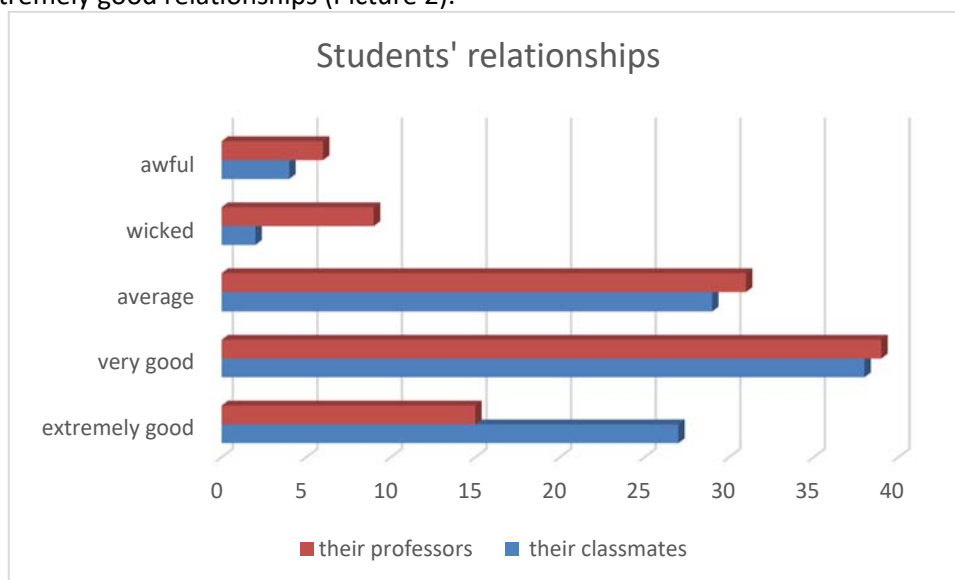
Picture 2. Students' relationships with their classmates and their professors.

Although test anxiety can affect male and female adolescents and middle school and high school students, many studies worldwide suggest that female adolescents and middle school students are possibly at a greater risk of developing test anxiety (Lowe, 2021; Zile *et al.,* 2021, Torrano *et al.*, 2020). In this study differences were recorded between senior high school female and male students regarding the anxiety prior to examinations, choice of studies and future profession.

Girls stated feeling pressure because of school requirements, being extremely concerned about their performance in examinations and experiencing negative emotions due to examinations, while boys did not feel pressure, were moderately concerned and did not experience negative emotions. (Figure 1)

GIRLS   BOYS

Legend:
- Very
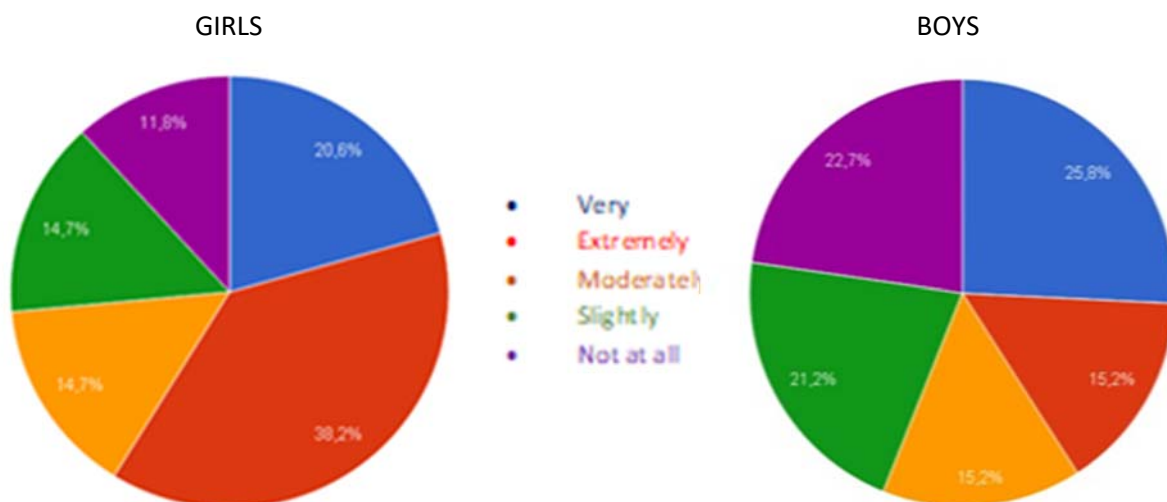- Extremely
- Moderately
- Slightly
- Not at all

Figure 1. Assessment from 7. To what extent do you believe are true the following sentences regarding your performance in the school final examinations? [I am concerned about my performance in them.}

Regarding adolescents' extracurricular activities such as sports, dancing, music and others, the responses were approximately evenly split when asked about the degree of satisfaction. Twenty-two (22%) students responded "not at all," while the same number (22%) reported being "very satisfied,"; twenty-one reported being "slightly satisfied" and 20 "extremely satisfied". The lowest, yet not small, percentage (15%) of students reported being "moderately satisfied" with the hours spent on extracurricular activities (Picture 2).


Degree of satisfaction
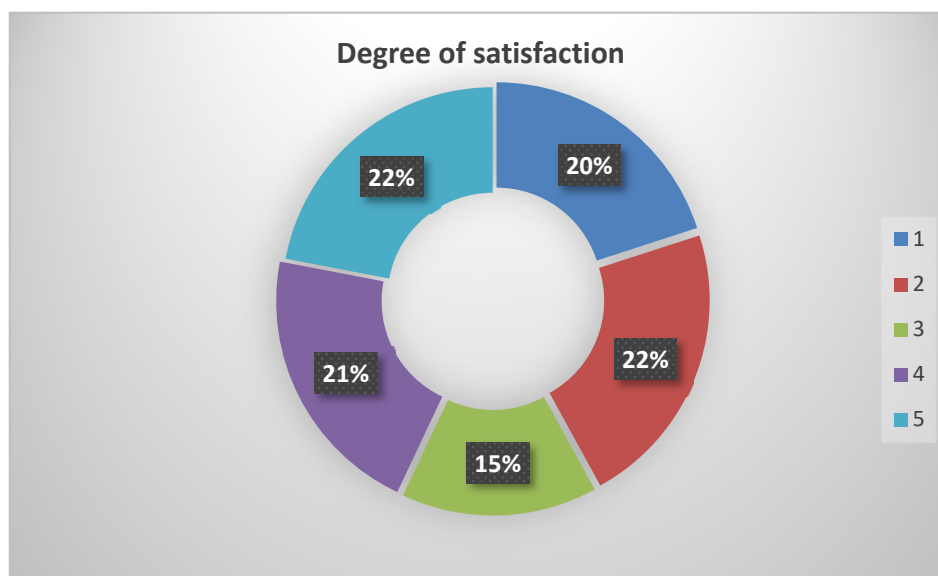
Picture 3. Students' degree of satisfaction for their extracurricular activities.

Furthermore, adolescents' non-school-related activities were very essential for their psychological balance. Approximately 3 out of 5 students, i.e., 64%, did not wish at all to reduce the hours they spent on extracurricular activities. Interestingly, eight students reported they wanted to reduce the time spent on these activities; two "a lot", and six "extremely". Thirty participants wanted to increase their involvement in extracurricular activities "extremely", 21 "a lot" and the same number of students did not express the need for extra time for activities that were not related to school or examinations. The positive aspect of extracurricular activities is that most students consider that these are their own choice. They represent the free time of adolescents, during which they have the opportunity

to escape from their problems and concerns, both in and out of school, and to boost their mood and strength. Thus, 42% answered "extremely," 27% "a lot", and 16% "moderately."

Although the most predominant answer to the question on whether adolescents' self-esteem depends on the final examinations was "not at all" (36%), the percentages of the other answers should not be ignored. One out of three students answered "a lot" or "extremely," (19% and 13%, respectively), while 21 answered "moderately." Furthermore, most (26%) students reported being "very concerned" about their school and examination performance. However, the percentages of the remaining four options were quite similar; thus, 20 participants answered "slightly," 19 "moderately," 18 "very," and 17 "not at all." (Picture 4).
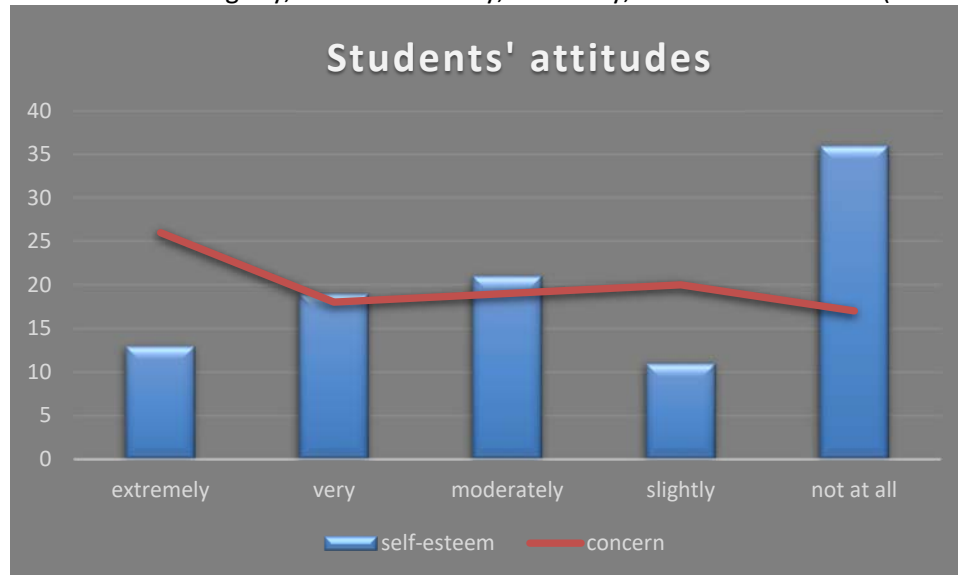
Picture 4. Students' self-esteem dependence with final examination in relation with their concern about the examination performance.

Half of the students felt their effort was "moderately" or "very" reflected on their school performance. Twenty students considered their school performance does not at all reflect their studying. Conversely, 12 students believed it "extremely" reflected their effort. Regarding the experience of negative feelings due to examination requirements, no wide variations were recorded between the five response options. Twenty-nine adolescents felt no anxiety, anger or desperation, 21 "extreme," 19 "slight" and 18 "a lot."

Regarding the ways of coping negative emotions, most (29%) participants never sought their parents' support, 27 "sometimes" did, and 24 "rarely." Only 20 students when feeling stress, pressure and frustration "usually" or "always" sought support from their parents. Students preferred to seek support from their siblings and friends rather than from their parents; particularly, 46% "usually" or "always" needed the help of their close environment, which represents the double of the percentage seeking parents' support.

Interviews

Out of twelve students who participated in the research, 8 were not influenced psychologically either negatively or positively by the stressful conditions during the final exams. As a matter of fact, they reported reduced to no stress levels in final exam situations. Four students reported an influence ranging from slight to strong. In every case the students have effectively managed to create the mental structures that allow them to either reduce stress levels to manageable by taking breaks from studying or by using the feelings to further motivate and fuel their studying efforts. In that manner, extra curriculum activities seem to play an important role in their psychology.

Out of twelve students only three reported a negative impact on their self-esteem. In one case these negative feelings were followed by the believe for strengthening of resolve and for increasing efforts to successfully pass the exams. One student found the whole final exam process frustrating and ineffective. Another mentioned feeling of discouragement, despair and hopelessness that leads to a retrospective reflection of partly efforts that in turn leads to a further effort. In most of the cases a possible success in the final exams will have a positive impact on the self-image. It gives a sense of reward for the efforts and satisfaction for all the hard work that has paid off. On the contrary, two students mentioned that although success will have a positive impact, a possible failure will have a negative, disappointing effect.

Discussion - Conclusion

The results of this study provide some evidence that our initial hypothesis was confirmed, although differences were recorded between students. Adolescents attending general senior high schools were either consciously or unconsciously critical toward the current education system, as shown by the answers in the questionnaire and the interview. They do not like attending school, although their relations with their teachers and peers are good, i.e., their socialization in school is good. This dissatisfaction may be attributed to the practices resulting from the education system in Greece. It seems that students who spend more time to school-related activities, as well as students insecure about their knowledge, tend to face higher anxiety levels and therefore they are not satisfied in school. These findings are in accordance with relative literature about Greek students, where it is stressed that excessive time spent on studying for the exams increased anxiety (Lazaratou, *et al.,* 2013).

Their self-esteem was affected by their performance in the examinations, which is evident from their conflicting answers to the questionnaire on this topic, and from the interview. One female student said: "Since I currently have no self-esteem, succeeding will increase it,"; another female student explained that adolescents' self-esteem and their success in examinations were extremely associated because they were affected by the criticism from their social environment and family. In case of failure, they reported being "stigmatized," which impeded their self-esteem. Other studies also showed a negative relationship between self-esteem and optimism and anxiety (Bagana, *et al.*, 2011).

Our results showed parents were supportive, encouraging adolescents to make a great effort, but they went beyond the limits by directly or indirectly expressing their expectations of their performance in examinations. Parent-child communication was not ideal during this difficult period of examinations, owing to the characteristics of adolescent thinking and behavior; thus, students reported lack of interest in seeking their parents' support. Therefore, parents were not able to assist them, nor could they show them ways to manage their anxiety. It has been reported that previous good communication and relationship positively affects the student's developing self-esteem, which in turn reduces their anxiety.

High-achieving adolescents consider that success in examinations will reward them for their efforts, but good preparation does not imply lack of anxiety prior to the final examinations. One interviewed male student mentioned that "If you have put in a lot of effort, you get anxious about wasting your effort, whereas if you have put in a little effort you don't need to be anxious because you know you haven't worked." Furthermore, a female student added that "Even if you are a good student, you may 'blank out' and not perform well," suggesting that anxiety results from a non-objective view of the situation.

It is evident in literature that anxiety plays a crucial role in test scores regardless of the specific area of study, and it negatively impacts individual performance. In this respect, the negative association between anxiety and academic achievement is not confirmed, but there are evidences that afford mainly students with higher school performance. Consequently, it is reasonable that high-performing students are more worried about achieving poor grades and have a greater fear of failure than low-performing students. Additionally, parents can help

children to manage anxiety by encouraging them to have more faith in their ability to accomplish school tasks (D'Agostino *et al.*, 2021).

Peers seem to contribute remarkably to adolescents' efforts for high performance, owing to the competition that is created between them; one student reported that "High goals in the group inspire you and you try harder; it is not absolute but it happens, as well as the opposite." The need for acceptance by peers may affect adolescents positively or sometimes negatively, while they usually fear that "Maybe my friends will get accepted in a higher education institution and I won't," as one female student reported.

This factor of parent – student relationship, their influence and their desires and the interdependence that this relationship creates plays a crucial role in igniting this stressful situation (Giannousis, 2018). Not fulfilling their targets can be interpreted as failure of their trust on them. Despite this, adolescents will continue to depend on them, since they lack the ability for self- definition, the beginning of an autonomous destination. For the majority of them, appropriate choices are few and their desires are plenty. The choice of a university department which can guarantee future development is a crucial factor which can lead in the students' process of autonomy, their independence of family 'nestle' and at the same time it rewards and improves their relationship with them. They are primarily responsible for planning and gradually intensifying this effort since adolescents can hardly 'define their limits and coordinates'.

The basic hypothesis of the research that adolescents in senior high school feel intense anxiety about their performance in the Greek school final examinations seems to be confirmed and is in line with other similar studies (Kurt, *et al.*, 2014).

School anxiety, often manifested at school age, refers mainly to difficulties in school life. However, Mpimpou-Nakou (2004) reports that school anxiety is related to various factors, including the individual characteristics of the child, family, social conditions, school curriculum, practices of the educators and other members of the school community. All these factors should be accounted for when investigating strategies to reduce students' anxiety. Paraskevopoulos (2005) argues that many of the problems children face at school may result from anxiety or phobia. Furthermore, he highlights that medication is not an appropriate treatment for phobias in children, but other ways and techniques should be preferred and applied, based on a team effort between the child, educators and parents.

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Academic experiences and emotions of dyslexic people

Louari Marina
Laboratory Teaching Staff, Special Education Department, University of Thessaly
mlouari@uth.gr

Abstract

Dyslexia is a learning difficulty of written and oral language, which affects a significant number of students and has important educational, social, and emotional consequences. There is a body of research suggest that students with dyslexia have serious emotional problems but there is not sufficient data about their viewpoints and experiences. For this reason, the aim of this study is to investigate the academic emotions of students with dyslexia and their experience of attending school. A sample survey was designed, seventy-four people diagnosed with dyslexia participated and the data were collected through a questionnaire and an interview. The analysis of the data reveals that dyslexia significantly leaves its mark on the life of dyslexic people and affects the socio-emotional factor. Teachers' behavior afflicts their emotions, continuous failures and frustrations result in their self-esteem.

Key words: academic experiences, dyslexia, emotions.

Introduction

Dyslexia is a learning difficulty of written and oral language, which affects a significant number of students and has important educational, social, and emotional consequences (Nalavany, Carawan, & Brown, 2011). According to Frith (1999), dyslexia can be defined as a neurodevelopmental disorder, with biological origins and behavioral cues that go far beyond the problems of written speech. These elements construct the notion of dyslexia and more over we need to take also into consideration the impact of cultural factors (Frith, 1999). For that reason, in recent years, dyslexia is treated as a multi-symptomatic and heterogeneous disorder, which incorporates a wide variety of cognitive and emotional difficulties. From time to time, researchers suggest that students with dyslexia have serious emotional problems (Nugent, 2008) but there is not sufficient data about their viewpoints and experiences. There is generally a deficit in the literature on the experience of dyslexic students from their school years (Fuller, Healey, Bradley, & Hall, 2004) and especially of dyslexic adolescents (Pollak, 2005; Thomas, 2004). The experience of having a learning difficulty affect students' self-concept and efficacy (Riddick, 2010) so there is a connection between poor academic performance and low motivation. Furthermore, it was found that students with dyslexia overwhelmed with negative emotions such as felling disappointed, frustrated, ashamed, embarrassed, and so on, because of failed learning efforts (Riddick, 2002). The relationship between academic achievement and self-perception is supported by many researchers (Rhodes & Nevill, 2004; Pollac, 2005). Low self-esteem is associated with low performance and low achievement motivation (Burns, 1982; Zambo, 2004). However, no clear answer can be given as to whether low self-esteem leads to low performance or vice versa (Riddick, 2010). Riddick (2010) points out that low self-esteem and high levels of stress in achieving schoolwork are characteristic of dyslexic students. Hence, the role of special education teachers is crucial in the construction of a positive self-image and self-perception of dyslexic students. In other words, teachers should not only emphasize students' attainment in academic field but also the socio-emotional field should be strengthened.

Students with special educational needs do not have the same needs with typical educated students and inclusive schools have to be beneficial for all students (Villa & Thousand, 2005). But as we have already said in advance, students with dyslexia often experience the frustration because of low academic performance (Alexander-Passe, 2006; Al Zyoudi, 2010) which is not in accordance with their study hours. These difficulties are intensified if diagnosis of dyslexia

does not exist on time and implementation of an intervention programme is absent. Although researchers are looking for tools to identify learning difficulties from pre-school age, students with dyslexia in Greece usually get a diagnosis three or more years after they enter in primary. In other words, they firstly fail academically and then professionals seek for the cause of their failure. As a result, dyslexic students have a difficulty in meeting the academic expectations, their ongoing low capabilities, and the frustrations of achieving the academic goals affect them psychologically. Failure, frustration, and low self-esteem are the emotions that prevail (Lithari, 2019). In addition, teachers often have criticized or humiliated them, referring them as being "lazy" or "slow-witted" and these comments have influenced their self-concept, as many researchers have already highlighted (e.g., Humphrey, 2002b; Zambo, 2004; Ingesson, 2007; Eiisa, 2010; Jacobs, Parke, Ziegler, Headlead, & DeAngeli, 2020). Early identification and appropriate intervention may reduce these negative feelings (Frederickson & Cline, 2002). Teachers should have the qualification to determine the type of difficulties that some students face (Hall,2009). However, it is not realistic to expect all teachers to be experts in this field although a teacher can easily see the difference between those students who are struggling with learning and typical students. Furthermore, if the diagnosis is delayed, the consequences are evident in their emotions as students state for themselves that they feel failed at school (Casserly, 2013). On the contrary, when an early identification exists, they feel relieved as they can justify these difficulties. As a result, they have more confidence in themselves (Glazzard, 2010; Madriaga, 2007) and can come up against with the consequences as they get used the new condition (Pavey, Mechan & Waugh, 2010). In addition, when an early intervention programme is implemented, the experience of these emotions is not so intense, and the results of the intervention are evident both in their academic course and in their self-image.

An additional factor that significantly influences the academic course and consequently the emotions of dyslexic students is the attitude of the parents. Parents who are concerned about their child's learning difficulties look for the cause of these difficulties and more over they seek to implement an intervention programme on time to confront these difficulties. As they have realized that their offspring have difficulty in reading and writing they do not remain passive in the face of this fact but look for ways to facilitate this process. On the other hand, some other parents, who are probably not well informed of learning difficulties, think that their child is just a student with low academic performance, so they have accepted this condition and consider that any educational support is in vain. Finally, another group of parents, although they have realized their child's struggle with learning, delay or refuse to identify these difficulties, fearing the stigma and their child's rejection of his or fer schoolmates. In addition, they labor under the illusion that as their child grows up and put in more effort, he or she will overcome these difficulties. They have not realized that consecutive failures and frustrations of their expectations would negatively affect them and lead eventually to the withdrawal of any academic effort. So, parents' perceptions and support play a crucial role on dyslexic students' academic attainment.

As far as it concerns students' relationships with their classmates, it is argued that they are often excluded from either play or classroom activity groups and they face an additional barrier in general education classes (Cameron, 2016). As they struggle with reading and writing, they are often ridiculed by their classmates and for that reason they feel ashamed, embarrassed, and possessed by negative emotions (Nugent, 2008). Therefore, these negative emotions strongly affect their self-image and lead to further marginalization and isolation (Alexander- Passe, 2015b).

Hence, we easily could understand that several factors such as early identification of dyslexia, implementation of an intervention program, teachers' attitudes, parents' support, and relationships with classmates significantly affect dyslexic students' emotional development and shape the conditions for building positive or negative school experiences. For all these reasons, we decided to seek information about their feelings directly from

dyslexic people. Up to now, all this information has been gained by parents or teachers so there is a need to give voice to them and speak about their experiences, emotions and may be difficulties that have met during their school years.

Methodology

The aim of this study is to investigate the academic feelings of students with dyslexia and their experience of attending school. As already mentioned, there is little literature which sed light on the dyslexic people's point of view (Pollack, 2005; Cameron, 2016). Moreover, quantitative research does not provide accurate information about feelings and experiences. On the contrary, through qualitative analysis we can collect more information (Creswell, 2012) so that we have a clear picture of their school experience. Specifically, the narratives of dyslexic people who have just finished school are considered well documented (Jacobs, et al., 2020) as on the one hand they can now precisely describe their experiences from schooling on the other hand, it is early enough to set forth accurately their emotions.

Sample

For this purpose, a sample survey was designed. Seventy-four people diagnosed with dyslexia participated (83.8% boys) with an average age of 19.54 years and IQ about 100. For the selection of the sample, convenient sampling was chosen, and the data were collected through a questionnaire and an interview. The first part of the questionnaire concerned the demographic data of the sample and the second one consisted of twenty 5-point LIKERT questions that concerned the support they received, the attitude of teachers and their classmates, their reading habits, etc. In addition, after elaborating the questionnaire, participants were invited to participate in an interview giving additional information about their experience from their schooling. The goal of this process was to record their thoughts and feelings so that we have sufficient results because qualitative measures such as interviews are crucial to capture the experience of participants (Creswell, 2012).

Process

The questionnaire consisted of semi-structured questions that participants were asked to answer either in person or by telephone. The reading of the questions both during the telephonic or face to face participation was done by the researchers due to the existence of possible reading difficulties of the participants. The answers were recorded through a transcript of the interview in a researchers' form. During the process, all the rules of ethics, consent of the individual, anonymity and protection participants' personal data were enforced. Additional data were collected as participants have the opportunity to report how they experienced their schooling in relation to classmates, teachers, parents and educational process, in general. Fireballs were used to extract additional information in order to be deeply investigated and clarified the information provided (Creswell, 2012). Researchers used to be professional in gathering information, assuring participants that their answers would be used exclusively for research purposes.

Research Questions

In order to have access to this information we put the following research questions:

1. Did early identification of dyslexia affect students' emotions? Which type of provision did dyslexic students receive?
2. How were their relationships with their classmates and their teachers?
3. Did their parents support them and how?

Results

The analysis of the data showed that most of them were boys and mean of age about 20 years old. They received a dyslexia diagnosis more often after the age of 12 years (Table 1). Examining the date of the 1st identification of dyslexia, the students who were diagnosed during their studies in the first grades of Primary School (8-10 years old) ranged in 17.6%, while most were diagnosed later, during their studies in Primary school (10-12 years old) in a range of 32.4% and during Gymnasium grades (12-14 years old) in a range of 35.1%. Finally, less often the diagnosis was issued after the age of 15, during their high school courses (14.9%) (Table 1).

Table 1: Demographic data

Genter	N	%
Male	62	83.8
Female	12	16.2
Age		
-20 years	52	70.3
+ 20 years	22	29.7
Time of diagnosis		
8-10 years	13	17.6
10-12 years	24	32.4
12-14 years	26	35.1
15-	11	14.9

The educational support they received concerned attending the resource room of their school as well as private lessons offered by the family (Table 2). It is notable, there were participants who were not supported at all during their school years. Examining only the percentage of those who answered positively, it appears that 37.5% attended the resource room before the

Table 2: Educational Support

		N	%	Valid %	Cumulative %
Resource room	YES	16	21.6	21,9	21,9
	NO	57	77,0	78,1	100,0
	missing	1	1,4		
	Before diagnosis	6	8.1	37,5	37,5
	After diagnosis	10	13.5	62,5	100,0
	missing	58	78,4		
Private Lessons	YES	33	44,6	46,5	46,5
	NO	38	51,4	53,5	100,0
	missing	3	4,1		
	Before diagnosis	20	27,0	60,6	60,6
	After diagnosis	13	17,6	39,4	100,0
	missing	41	55,4		

identification of dyslexia was issued, while most of them after it (62.5%). In relation to the attendance of special education courses provided by the family, 60.6% started to be supported before the identification of dyslexia. Many of them started special education lessons for dyslexic students quite early (7-8 years old) in contrast to those who attended lessons in the resource room (9-12 years old).

Relationships with their classmates were usually good and no cases of stigma have been reported, except of a few occasions. In some cases, it was reported that some of their classmates made fun of them when they went to the resource room and for this reason, they did not want to continue lessons there. Besides, the lesson in some cases was done together with students who had other types of difficulties (autism, mental retardation, etc.) and in fact they were not helped academically because they had different needs. As the analysis of the interviews showed, many of them chose to hang out with classmates who had either lower educational achievement or they were younger. However, several of them reported that they did not notice any difference in their relationships with their classmates, they had many friends and in some cases were very popular in their class. Examining these responses in relation to the age of determination of dyslexia was found that those who had early identified and followed a special education intervention programme for dyslexic students were not affected in their relationships. In contrast, those who were diagnosed later experienced many emotional difficulties such as low self-esteem, learned helplessness, and generally these negative emotions seem to affect their academic and social achievement.

Regarding the treatment by teachers, a statistically significant dependence on age be noticed (t (71) = - 2,008, p =, 048 <0.05). Examining the average values per age, the difference was found in the lowest average value which expresses the most negative behavior that people under the age of 20 reported (Table 3). However, we have a clearer picture from the analysis of the interviews.

Relationships with teachers were more complex. While participants under 20 years old reported that teachers in the primary school were supportive and tried to help them on the other hand, participants over 20 years old stated that they would not like to remember their primary school years because they can't forget their teachers' negative characterizations such

Table 3: Relationships with teachers

	Age	N	Mean	Standard deviation	t	p
Primary school	Up to 20	51	2,71	1,221	-2,008	,048
	20 and over	22	3,27	,767		
Gymnasium	Up to 20	51	2,94	1,066	-,558	,579
	20 and over	22	3,09	1,019		
High School	Up to 20	50	3,06	,867	-,137	,892
	20 and over	22	3,09	,921		

as "lazy", "stupid", "with no learning interest", "unsuccessful" and so on. In the high school the only facility provided to them was oral assessment and this process raised questions of both teachers and some of their classmates. They were accused of "inventing" dyslexia to make their assessment easier as the misconception was that oral assessment is easier than written one.

Regarding the treatment of students with dyslexia by teachers (Table 4), it appears that during their primary education the treatment was "Good" (35.1%) or "Indifferent" (29.7%). At the same time, looking at the cumulative percentage of positive choices, a response rate of 36.5% is obtained, with only 1.4% due to the more positive response. The corresponding

cumulative percentage of negative behaviors is 32.5% and 17.6% however it is shaped by the most negative response. Therefore, the treatment is judged as divided into 3 categories (negative - indifferent - good) with only 36.5% of individuals having positively determined their treatment by teachers. As the level of education increases, the percentage with which the negative choices were declared decreases, with a parallel increase in the percentage of the category "Indifferent treatment".

The relations with parents were ambiguous, too. Parents well informed about the dyslexia looked for the cause of the difficulties on time and offered them early support. But there were also parents who believed that the difficulties would be overcome gradually as their child matured. In these cases, the support came later as the student had already experienced failure and the low self-image was established. Finally, there were parents, mainly of low socio-economic and educational level, who simply accepted that their child was characterized by low performance, that he/she did not like school and for this reason they did not offer any kind of support. In these cases, the student was diagnosed during high school years and the implementation of an intervention programme was no longer existence.

Table 4: Teachers' attitude toward a dyslexic student

	Bad		Moderate		Unconcerned		Good		Very Good
	N	%	N	%	N	%		%	%
Primary school	13	17,6	11	14,9	22	29,7	26	35,1	1,4
Gymnasium	9	12,2	12	16,2	24	32,4	27	36,5	1,4
Lyceum	4	5,4	12	16,2	32	43,2	23	31,1	1,4

Discussion

The analysis of the data reveals that dyslexia significantly affects the life of dyslexic individuals (Leinonen et al., 2001), as learning difficulties affect the socio-emotional factor (Martinez & Semrud-Clikeman, 2004). There is ample research data concerning dyslexic people's academical efficacy and limited data about the emotional effects although researchers claimed that affect even in adulthood (Hellendoorn & Ruijssenaars, 2000). People with dyslexia may have found a way to overcome reading and writing difficulties but still have negative memories from their school years (Hakkarainen, Kovero, & Letho, 2003; Jacobs et al., 2020). The results highlight the need to explore the relationship between learning difficulties, self-perception, and effectiveness. Instruction designed for dyslexic students results in improving academical achievement, but psychological support is just as important as educational one. Therefore, teachers need to take seriously into account the emotional factor so that students with dyslexia form a positive self-image as they very well know their strengths and weaknesses.

The importance of early diagnosis is key point in accurately identifying difficulties and designing effective educational interventions. In this case, the diagnosis affected the participants' self-image positively as they were given an explanation why they face these difficulties (Ingesson, 2007). The positive impact of early diagnosis was also supported by this research, as the possibility of cognitive difficulties in low intelligence was ruled out (Doikou-Avlidou, 2015) and it was a relief as the existence of learning difficulties can be justified (Ingesson, 2007). In the interviews, the participants reported that they were relieved when an explanation of their learning difficulties was given that had been an obstacle to their academic

development for so many years. In addition, their self-perception improved as they realized that these difficulties were not related to their intelligence. In addition, in some cases they reported that once the cause was identified, an appropriate intervention programme was designed. However, in some cases diagnosis was a reason of stigma of negative (Long et al., 2007; Singer, 2005) and shameful comments (Hellendoorn &. Ruijssenaars, 2000). Few were those who referred to the labeling of their difficulty and especially those who attended lessons in the resource room. They reported that it was more difficult to have friends than their classmates, most of whom were not so friendly with them. In general, it is confirmed by the literature that students who attend lessons in the resource room often feel isolated or have fewer friends (Demchuk, 2001). Broadly speaking, the relations with their classmates were good and no negative behaviors were reported.

Teachers' attitudes towards students play an important role in their educational process, especially when it comes to students with dyslexia (Humphrey, 2003; Glazzard 2010). Existing difficulties in achieving educational milestones in reading and writing are intensified if teachers' attitudes are not supportive (Rogers, 2007). Therefore, their role is crucial in shaping a positive self-image of students with dyslexia (Singer 2008). In relation to their teachers' attitudes, some participants reported a positive experience and others a negative one (Humphrey, 2003; Riddick, 1996). Sometimes, these negative attitudes might relate to students' negative behaviors that even could lead to keep secret dyslexia (Hellendoorn & Ruijssenaars, 2000; Ingesson, 2007) as they were often confronted with stigma. Moreover, in some cases they accused teachers' lack of understanding as the cause of their difficulties (Doikou-Avlidou, 2015). The participants highlighted that some teachers were not supportive, offended them in front of their classmates and questioned the existence of dyslexia attributing their difficulties to laziness and lack of interest for the lessons, data which are in accordance with previous researchers. Mostly, the older ones of the participants had a more negative image of their teachers' attitudes, perhaps because they reflected on their experiences from a greater distance or because teachers' remarks strongly etched in their memory and accompanied them forever. In the interviews, some of them reported that they were so insulted that they eventually believed that their intelligence was low, and any effort was in vain. So, they accepted this reality and refused their parents' support with extra lessons for dyslexic students. They decided that their goal was to complete compulsory education and seek other types of occupation on a practical may be level where reading and writing skills would not be prerequisite. Therefore, it is understood that their teachers' attitude significantly influenced not only their emotional field but also their future career choices. In contrast, some others stated that teachers' positive attitudes, facilitation and understanding of difficulties were a supporting factor (Margalit, 2003; Wong, 2003) so they built a positive self-perception (Long, MacBlain, & MacBlain, 2007).

Equally important is parental endorsement in dealing with socio-emotional difficulties (Hakkarainen, et al., 2003) as well as make easier to accept their difficulties (Hellendoorn & Ruijssenaars, 2000). Parents who looked for the causes of their offspring's learning difficulties in time and a special education programme was implemented, participants had not only a positive self-image but also their school memories were positive too. In those cases where the identification of dyslexia was delighted participants expressed strong negative emotions, stated that they would not like to have any memories of their school years and sought to find a job from which joy and satisfaction were derived. In these cases, it was reported that they did not have the slightest desire to study at university as they believed that they would not succeed (Burke, 2002; Alexander -Passe, 2006). These views have been confirmed by previous researchers as there is a significant relationship between academic achievement and self-perception (Rhodes & Nevill, 2004; Pollac, 2005). Overall, participants might be complained that the cause of their difficulties was not understood in time, but in no case did they report negatively on parental support. They said that their parents were always supportive and in

fact they were the ones who encouraged them to choose a profession from which they could feel satisfied. They were not blamed for the delay in identifying the difficulties on the contrary, the responsibilities were attributed to the teachers. Perhaps, parents concerned about their poor performance but in many cases did not have the information needed to identify these difficulties. Others reported that although the school did not provide any information about their learning disabilities, their parents by themselves were concerned and sought professional help both to identify the difficulties and to provide a supportive intervention program. In these cases, there was early diagnosis and intervention so their experiences from their schooling were relatively positive.

As a result, these attitudes significantly influenced participants' emotions. Most of them mentioned that they would not like to remember their school years. The failures, the criticize of teachers and sometimes the negative comments of their classmates are facts that would remain etched in their mind. After a continuous of failed attempts in reading and writing, they withdrew because they believe any extra effort futile. That situation affected both their educational and professional choices as many of them considered impossible to attend a university.

Conclusion

As a conclusion, teachers' behavior affects significantly the emotions of students with dyslexia. Continuous failures and frustrations influence their self-esteem and therefore their future professional goals are affected. The role of parents is also very important so that if they recognize in time the learning difficulties of their children and provide them with the appropriate education in the beginning of schooling, they will prevent the consolidation of negative emotions. Finally, the role of classmates is crucial as if dyslexic students feel accepted by their peers and have a sense of belonging to the school setting, they gain emotional balance. For all these reasons, it is easily understood that the early identification of reading and writing difficulties and the implementation of specific interventions are crucial factors for dyslexic students' education. These factors act preventively in experiencing negative emotions and failure.

The results of this study could not be generalized because the sample size was limited, and all participants were from a specific geographical area. Nevertheless, we consider the contribution important because people with dyslexia were given the opportunity to talk about their personal experiences from their school years. The information we have had so far about these experiences came from either parents or teachers. Nevertheless, despite the limitations mentioned above, the results are in line with international findings. For this reason, the issue should be further investigated to provide comprehensive information on the difficulties experienced by people with dyslexia. Finally, educational policy makers should take into consideration seriously research findings in order to improve the educational conditions of people with learning difficulties.

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Opting for praxis over theory in teaching music and vice-versa – what is it going to be?

Tsichouridis Tsabikos Anastasios
Primary Level Education Teacher
tsihtsab@gmail.com

Abstract

The purpose of the present paper is to detect and record the opinions of music educators in relation to the use of praxial or aesthetic music pedagogy and the reasons for the one or the other approach. Additionally, it aimed to trace teachers' views on what can be done to follow the one or the other philosophy in schools. The study followed a qualitative research method and for the collection of the data, personal interviews with seven music educators and a focus group discussion with another ten music teachers were conducted. The results of the research revealed that the majority of the teachers opt for the praxial philosophy of music despite the fact that this cannot be followed for many reasons. The teachers believe that the educational authorities can contribute to the praxial approach implementation with important curricula changes and valuable funding to equip schools with musical instruments.

Key words: Praxial philosophy in music, aesthetic education, music pedagogy.

Introduction
Definitions of terms

It could be argued that the philosophy of music but also of music pedagogy is a twofold concept: that of aesthetics and that of a practical approach. There are differences and varied aspects of opinions between them and more particularly regarding the music pedagogical 'practice' that is employed or suggested to be followed in school settings music teaching processes. Starting with the approach of 'Praxial' music pedagogy, the term 'praxial' derives from the Greek word 'praxis' (action) introduced by Aristotle. The term, according to the definition provided by the Cambridge Dictionary (https://dictionary.cambridge.org /dictionary/english/praxis), means "the use of a theory or a thing in a practical way". On the contrary, the term aesthetic is derived from the Greek verb 'aesthanome' (feel) and refers to "something or someone beautiful" (https://dictionary.cambridge.org/dictionary /english/aesthetic).

Praxial music pedagogy vs music education as aesthetic education

The basic theses of the Praxial philosophy of music education are that "the nature of music education depends on the nature of music" and that "the importance of music education depends on the values of music in human life" (Elliot, 2007, p. 1). According to Androutsos (2007), the Praxial philosophy of music which emerged in the 1990's, represented by Elliot (1995) and other educators such as Regelski (2005) or Alperson (2010), centralized the difference between teaching music and teaching *for* music with a main focus on 'praxis', i.e the creation of music. Thus, an important concept of Praxial music education is that music is not just about listening to certain pieces of music for example but it is the process, the performance, the act of music with important musical skills integrated such as listening, composing, improvising, arranging, conducting music (Tailor, 2021). In other words, Elliot (2007) argues that one should 'make' music, sing, play a musical instrument, create music, produce music, and not just listen to or talk about music. He also supports the idea that understanding music as an 'act' contributes to the improvement of man and the understanding of music (Elliot & Silverman, 2017).

Contrary to the theoretical view of music, that is, talking about music, such as the history of music, various events in music, or listening to music, the practical view of music emphasizes

its practical side, that is, its performance. This pragmatic view is opposed to Reimer's aesthetic music education which sees music as a 'musical piece' and emphasizes the results of the musical process, and the 'accomplished work of art' (Tailor, 2021) as opposed to the musical performance. Perakaki (2009, p. 84-85) argues that, in his book "A Philosophy of Music Education", Reimer talks about the goal of music education as the individual's ability to enjoy music and as an inner force that provokes emotional reactions. Perakaki mentions that this ability is inherent in everyone and for this reason music should not be the privilege of the few. She explains that the main tool for developing the aesthetics of music is simply listening to or enjoying music. However, as she argues, due to the focus of music aesthetics teaching on mere listening, the concept of the philosophy of music education as an aesthetic education began to be questioned. This was because elements such as composition, performance and improvisation, for instance, were neglected. Thus, according to Perakaki, the emergence of David Elliot and his Praxial philosophy, discussed in his book 'Music Matters: A New Philosophy of Music Education', introduced music as an act, as praxis, and as musical performance, elements which are much more important than just the joy of feeling or listening to music, in other words the aesthetics of music.

Elliot calls his work 'Musical matters' a 'practical (praxial) philosophy' because he believes that understanding the nature and significance of music is not a simple process of understanding some work of music or some other, but it is a procedure that includes actions and results and everything involved in them within a social context (Silverman et al., 2014). In addition, Elliot emphasizes the fact that music should be understood in relation to the concepts and values that emerge from the production of music in specific cultural environments. All of the above, concerning the practical philosophy of music education, have brought significant changes in the evolution of music pedagogical perception, during the last decades, in relation to music education as an aesthetic education (MEAE). What Elliot had in mind and proposed was, in a way, to empower music educators to act according to the educational situation, each time they needed to do so. He talked about the four basic aspects of education "*in* music, *about* music, *for* music and *through* music that require balance in used educational practices centered on human beings" (Hatzilamprou, 2016, p. 33). According to him, music displays many and important values, including the one that concerns the need for balance between the musical skills of students and the musical performances they are called to implement, but also the skills mentioned above (listening, composition, improvisation, adaptation, direction of music) (Elliot, 2007).

This balance will motivate students to play music, which is a key goal of the practical perspective of music, and will consequently lead to their smooth and gradual understanding of music. This, after all, should be the main purpose of students' music education at school and not simply their education and/or training in order to follow a music profession, for example. In other words, students should be encouraged to be creative and should be given the opportunity to express themselves musically. Elliot also exploited Csikszentimihalyi's theses in his pragmatic view of music education and positions for the 'life experience' (Raptis, 2021), a fact that emphasizes the social dimension of the musical act. Based on this, it is suggested that, during their music education studies, students engage themselves in similar musical experiences as they make music and that this engagement is a basic part of their lessons, thus being offered the opportunity to be creative and cultivate their musical skills (Elliot, & Silverman, 2015).

The use of praxial music pedagogy

The importance of the Praxial philosophy of music is discussed by Daoutidou (2020), who argues that it should be integrated in the music lesson with the teachers focusing on its experiential aspects, thus, allowing students to expand their creative and expressive capabilities. Kteniadaki (2008) however reports that the syllabus of the Music lesson in Secondary Education in Greece, for instance, focuses more on the aesthetic aspect of music and less on its practical use. According to the author the content of the music course syllabus mainly emphasizes the understanding of basic concepts of music and its socio-cultural and historic origins rather than the musical performance. Perakaki (2014) discusses the absence of the praxial philosophy of education or its minimum reference and the lack of authorities' interest to integrate it in the teaching practices of music education in many countries across the globe. What is more, this happens regardless of the benefits the praxial philosophy displays for students and their musical knowledge and musical improvement (Perakaki, 2009).

On the contrary, and according to Westerlund & Vakeva (2007), the praxial philosophy of music is introduced as part of the change of the National Curriculum in Finland and in general, it is a process which matches very well with the ideas and multicultural perspectives of the Finnish music educators. Therefore, it is accepted and practiced as an approach that has inspired the community of music educators of the country and is capable of enhancing students' musical performance and interest in music. A similar interest in the Praxial philosophy of music is placed by Chinese educators who seem to find connections of this with their ancient Confucius values and music history and theories (Jiaxing, 2007). Finally, the same philosophy is also followed by schools in Bavaria, Germany, with students being able to practice music based on the praxial approach in order to enhance their musical skills (Tzouna, 2020).

Rationale for the present study

Today, music education forms part of the majority of curricula programs content in many parts of the world. This is so because music is considered important for many reasons. For instance, a simple exposure to musical elements helps to stimulate the areas of the brain that are responsible for memory function, the processing of auditory information, reading and attention control. Research points out that music makes it possible for students to practice and enhance fine motor skills, linguistic and mathematical accuracy, as well as combinatorial thinking. What is more, through music in education, students and people in general are facilitated to express their inner thoughts and feelings. Teachers and parents have the opportunity to understand young people's problems and help them overcome them. Music helps to create bonds through sound, song, movement and dance. Music can be both recreational, it can contribute substantially to the spiritual development of children, act as a means of emotional expression and interpersonal communication and provides social skills, necessary for their lives as adults.

In an effort to modernize the education of music, Greece began designing and implementing a new music curriculum. An attempt was made to adapt this new curriculum to a more synchronous methodological approach. This is because students of today encounter music in so many areas around them and are involved with it in a variety of ways. Students listen to music, create music, attend private music conservatories, form their own bands, attend music concerts, sing, write songs or music themselves. It is a rather challenging era for music educators and the musical practices they need to convey in the classroom to meet the needs and interests of their students. The question is, to which extent do these practices tend to employ the Praxial philosophy in teaching or the aesthetic perspective of music pedagogy which is based mainly on theoretical knowledge and a general aesthetic appreciation of music? Based on the aforementioned points, we decided to conduct a study in order to investigate the philosophy of music adopted by music educators in public secondary education schools of Greece today, and the reasons that affect their decision for one or the other

practice (praxial or aesthetic philosophy of music pedagogy). What is more we wanted to investigate teachers' opinion on what can be done in order to be able and use either the praxial or the aesthetic philosophy of music in their music teaching processes.

Methodological procedure
Purpose of the study and research questions

The study aims to investigate which philosophy of music is followed by music educators in Greece today, the reasons behind the choice and teachers' ideas for the implementation of the philosophy of music they prefer, in their music teaching in schools. Therefore, the research questions are as follows: 1. Which philosophy of music (praxial or aesthetic) do music educators employ in public secondary music education in Greece today and why? 2. What suggestions do teachers have to enable them to employ their preferred philosophy of music (praxial or aesthetic) in the school musical practices?

Research method and research tools

The qualitative methodology was followed for the implementation of the present research. This method was chosen because we were interested in penetrating into the depth of the research issues and investigate them in more detail. The choice of the method was decided as well because qualitative research seeks to discover the meaning research participants give to the issues under research through their behavior, the interpretation they give to the objects of the research and their inner views about the specific issues (Roussos & Tsaousis, 2011). Additionally, the choice of this method was considered more appropriate in order to draw more profound answers, find possible reasons behind the participants' decisions and choices and ultimately have a better understanding and explanation of the issues under investigation (Mason, 2003).

For the purposes of the research, personal semi-structured interviews were conducted with seven music teachers. Furthermore, and for triangulation reasons a focus group with ten teachers was also employed (Cohen & Manion, 2000) in order to collect further and more analytical data as well as for reliability and validity purposes. For the analysis of the data the interviews and focus group discussion were recorded so that all the information we would receive could be utilized later for a profound analysis but also for valuable material not to be forgotten or lost for some reason. Thus, the recording of the conversations enabled, on the one hand, the interviewers to immediately gather all the necessary information for processing, analyzing and evaluating the data, and on the other, to focus on important points which during the conversation might not have been perceived as significant for the study (Diamantakou et al., 2001).

Research sample

The population we aimed was music educators of public secondary education schools. Our sample was seven music educators (four male and three female) with whom we conducted personal interviews and ten teachers (six male and four female) for the focus group discussion. They all came from public secondary education schools of Thessaloniki in Greece and taught the course of music in Junior High Schools. Among their musical organs expertise were the piano, the guitar, the flute, the violin and bouzouki. However, they did not formally teach any of these musical organs in their schools but used them and played them mainly out of their own will and during school events or to accompany the school choir. They had all graduated from Greek Universities except one female teacher who had attended music classes in a Russian University and had majored in piano playing. Their experience in teaching music ranged between eight to 22 years in public schools.

Structure of the interviews and focus group questions

For the validity of the research tool, the interview and focus group questions were designed based on the literature for the design and stages of interviews (Cohen & Manion, 2000). They were also based on the material collected by pilot personal interviews with two different than the actual participant teachers in the study, who taught the specific subject (music) and a focus group discussion with three teachers who would not participate in the actual research. The aim of the pilot studies was to test the questions in terms of wording and accuracy to allow the researchers gather useful information, and based on the feedback received, to redesign as many items as needed, if any, for clarification purposes. However, the course of the interviews and focus group discussion in terms of content also depended on each respondent and their ability to be communicative and responsive on their part. The key questions of the interviews and focus group conversation revolved around the need for data collection so as to provide us with possible answers to the research questions and were categorized under five main areas: a) praxial philosophy of music teaching, b) aesthetic philosophy of music teaching, c) reasons for choosing praxial philosophy d) reasons for choosing the aesthetic philosophy in teaching, e) suggestions/ideas on how to employ the praxial or aesthetic approach.

Addressing ethical issues

Before the implementation of the main study interviews and focus group, and in order to ensure the validity and reliability of the research, the necessary clarifications and explanations were provided to all interviewees, so that the topics of discussion would be fully understood (Diamantakou et al, 2001). All participants were reassured that the discussions would be anonymous, and that the data would be used only for the purposes of this research. The interviewees were also explained that they could withdraw any time they felt uncomfortable or uneasy. The place and time of the interviews and focus group conversation were arranged based on the participants' decisions. All respondents gave their voluntary consent for their participation in this research. Finally, for ethical reasons, in the discussion of the results section, all participants will be referred to as P1 (participant 1), P2 (participant 2) and so on.

Research process

Upon the teachers' information about the content of the study and their voluntary consent to it, a meeting was held with each participant at the time and date available for a personal interview. The duration of the interviews ranged between 39' to 52'. All personal interviews were held outside the teachers' schools so that we would not impede them from their lessons. The focus group discussion was held in a school library during a Saturday morning and after the principal of the school had given his consent to us to use the space. This was also done in order not to cause any disturbance in the teachers' schools, and given the fact that they were all adults and this was easy to accomplish. The discussion had a duration of 56'.

Data analysis method

For the analysis of the data of the research tools, the basic stages and steps of content analysis were followed (Iosifides, 2003). Thus, and after the implementation of the interviews and the focus group discussion, repetitive listening, transcription and reading of their content followed in order to identify the points that displayed research interest (Iosifides, 2003). In the present research the content analysis was based on words, "which are the smallest units of the analysis. These are keys words, which convey basic concepts and messages" (Athanassiou, 2000). The keywords used in this research were 'praxial', 'philosophy', 'practice', 'teaching', 'music', 'aesthetic', 'theoretical', 'reasons', 'affect', 'influence' that existed in the respondents' answers in conjunction with the objectives of this paper (Athanassiou, 2000). Due to the large volume of the answers the data were organized into

categories on the basis of which the content analysis, under each category, was made (Iosifides, 2003).

Results

The findings in this study will be discussed herein in relation to each of the two research questions.

Research question one:

Which philosophy of music do music educators employ in public secondary music education in Greece today and why?

Based on the findings of the personal interviews and the focus group discussion, and according to the participants' responses, it can be said that music educators usually employ the aesthetic philosophy in their music teaching, mainly following the syllabus instructions: "*I usually do what the teacher guide says … students listen to music samples and we talk about the elements of music*…" P5, "*ever since I started working for the public sector I work with the content of the book … the syllabus and the theory mostly*" P2, "*Me and the other teachers I think do as told.. by the school advisor… we do not deviate from the course… you know, we help students cultivate their musicality, their auditory skills and so on*" P6, "*the syllabus says we should train learners to acquire knowledge – musical I mean and develop skills of understanding different kinds of music, notation skills etc, this is what we do actually*" P7. The majority of the teachers admitted they opted for the praxial philosophy. However, it was not feasible to implement in schools: "*if you ask me, I would say I would rather have learners 'bang' their drums and pull some strings there [laughing] but we are in school and this is not allowed*" P2, "*of course I would rather employ the praxial approach you mention but this is public schools we are talking about! You know what this means, don't you?!*" T3, "*Once, I dared ask some students bring their guitars in school and the principal got upset with the fuss made, he said we caused a chaos…*" P3, "*I would like to bring my guitar to school and ask the kids to do the same but this is not very easy, I wish we were like in the music schools that have music rooms to play*" P4.

When asked why this is so (not employing the praxial approach in their music teaching) the teachers replied that it simply is not a philosophy of music teaching in the public sector and that the other teachers in a school (teaching other subjects, like math, language, science, etc) are not happy with the noise made in school during lessons: "*My lessons do not include any musical instruments because the walls are made of paper [figure of speech meaning they do not have insulation] but I always use the tape recorder in class. I am a bit concerned with that too but it's far quieter than musical organs*" P1. What is more, some teachers complained that asking some students to bring their musical instruments in school is not considered an easy practice (kids can simply not carry their instruments every day from home, because they use a bus, walk to school or cycle and this may be dangerous): "*I have sometimes suggested that a number of the students brought their musical instruments in class every time we have a lesson but then, some parents came to school and they complained and said I would rather not ask them to do this. I think they were afraid of their kids breaking them [the instruments], damaging them or perhaps falling off the bike with their guitars in their back together with the heavy school bag. I dropped the idea of course immediately*" P7. However, almost each one of the teachers agreed that the music syllabus emphasizes theory over practice – though it does recognize the benefits of the praxial approach: "*as a general principle, dealing with instruments is empirical. Students learn to hold properly and use one or more musical instruments*" (Government gazette, p. 76027). The aforementioned point to a gap between what the syllabus suggests and what is offered in schools in reality.

What is more, since teachers are forced to strictly follow the syllabus, they cannot deviate from the content and the instructions that are given in the syllabus although they try to use alternative ways in the absence of real instruments, a fact that really disturbs them: "*I find it

hard to apply my ideas for playing music in school with the material I have to teach. For instance, the syllabus instructs us to allow learners to listen carefully to different sounds of music, respond to them with singing or motion, recognize basic elements of music such as melody, rhythm, structure etc but there is no reference anywhere about how to do this in practice. These are important music elements and what I do is that I usually take students to the lab and we use technology to discern these elements but it's not enough. How can you learn to understand and play music if you do not actually play music?" P3. Additionally, they admitted that the praxial philosophy of music is not a practice in schools, given the fact that the students may not have musical instruments of their own and/or the schools cannot or do not provide any of them for students' practice in school and within the course. This is clearly done only in music schools. Therefore, teachers are obliged to focus on the theoretical aspects of music, in other words on the aesthetic elements of music: "*Some years ago, when the school had been grunted some funding from the municipality - money back from an Erasmus program actually – I sort of 'pleaded' the principal to buy a few musical instruments and it was accepted. We had then bought three guitars, a trumpet and a tampourine. It was such a joy for me and the kids and we used them in turn, in groups with a cyclic program I had prepared. But now, with the new principal… he is not too happy with using them [the instruments]. He says the kids might break them and it's … public money…I certainly never agreed with … [asking us not to mention the name of the principal or the school she worked for obvious reasons]. So, now we hardly ever play music but we can listen to music or study about music, watch videos, discuss about music and such things*" P5.

Some teachers also complained about the fact that when festivities or school events are about to take place, everyone in schools expects the music teachers, the student choirs and the students in general to back up the events musically. However, they hardly ever feel that this [playing music] should or could be part of a real lesson, that in order to learn to play in a festival or support a school theatrical play you can't depend on the kids that attend private conservatories. Because then, it is like the school music course has no meaning or no value and that music should be taught only out of school, in private lessons or private music schools, which of course should not be the case: "*When holidays come, all teachers expect from us to do all the job, prepare the kids on how to sing, have kids play music, the principal is anxious whether the choir and the music players can synchronize, especially when the General Director attends the events, whether there is a piano background good enough to support the event emotionally and so on. But what they don't understand is that for the kids to respond positively in all these things they need practice, a lot of practice. Theory does not mean practice, kids need to exercise and the state needs to see that, to be more serious about that. We are lucky we have a few kids that attend music lessons in private and bring their instruments at school when we need them*" P6.

Additionally, all teachers commented on the fact that they would prefer to use the praxial philosophy of music. In our question how they would characterize the praxial philosophy in relation to music teaching and learning they said that it is a '*natural approach to music teaching*', '*an authentic way to learn music*', '*the only means to music learning*', '*everyone's preferred way to be involved in music*', '*an easier way to approach music*', '*the best way to enjoy music learning*', '*a logical way to attract learners to music*', '*the usual way to be introduced to music and its variations*', '*a good way to understand music*', '*a real way to experience music*' and many more. Finally, almost all teachers argued that, as they see it, it is high unlikely that we met anyone involved in music teaching that might prefer the aesthetic aspect of music as opposed to the praxial one. As they argued "*we learn through living, through experiencing, through doing, therefore, why should music teaching or learning be different?*" P5, or "*Though music is joy and fun, something that satisfies your emotions, it is also a skill you have to practice to learn, you have to touch to understand, you need to work on it to feel it and produce it*" P1, and "*if you are a musician, you know that you have to express*

your ideas and feelings playing music. If you are a music lover you want to listen to the beat of music, you want to experience the sound. Real music is just a combination of both. Only then you have an utmost fascinating experience of music" P2.

Research question two:

What suggestions do teachers have to make to enable them employ their preferred philosophy of music (praxial or aesthetic) in the school musical practices?

During the conversations with the teachers a big question seemed to overwhelm their mind with more or less the same content, though differently worded: '*why only theory, why not practice as well*?' As the question obviously troubled them, we tried to get deeper into this matter in the hope of having possible answers that would give us a better insight into the research question. Thus, in our question 'could you please explain further?' the teachers argued that, when it comes to music, public interventions should change dramatically. According to the participants, the government in particular, should begin to realize the importance of 'practice makes perfect' statement, realize its importance in music teaching and learning and integrate the praxial philosophy in its suggestions. As the teachers explained, it is not enough to 'mention change' but it is important 'not to fear to implement it'. Some teachers argued that these educational decisions should be part of all the educational stakeholders.

In questioning them what they meant, they explained that, usually the governments do not realize how valuable knowledge and information they could receive from their cooperation with music educators, school teachers of music, the kids themselves, even the principals. According to them, a cooperation between all parties could help syllabi and curricula designers to understand the real needs in schools, where music teaching and learning are concerned, as these [schools] have a clearer view of what works and what does not work well in educational methods and ideas. They also explained that if schools wish to be considered 'modern' and 'up to date' they should give opportunities for innovation, interaction and link to real life needs. In relation to music learning 'real life needs' applies to the fact that, absence or practice (praxis in music) could mean lack of appreciation for music, lack of understanding of music and its social implications, lack of significant messages music brings along to the people across the globe, like, how easy it can help people bond, appreciate other cultures, accept differentiation, and many more such issues. As they argue all these can be perceived easier through 'musical praxis' as 'the feelings of playing music are stronger than words'.

Furthermore, teachers explained that, besides the educational policy, school principals have their share in educational decisions. As they complained, a considerable number of principals are not very cooperative, they do not facilitate teachers' work, they even are quite negative in changes and innovation. According to the teachers, when it comes to music teaching, music educators are not allowed to take initiatives that they would like, as this would also mean expenses on behalf of the school and this is not something that pleases school directors. The participants in the study believe that the government should urge principals to be 'active listeners' when it comes to the school personnel and place their needs above 'managerial issues'. The teachers suggest that, when it comes to schools' financial difficulties, the municipality could contribute with some funding in order to equip schools with musical instruments for 'music practice' to take place. Finally, the majority of the teachers also suggested that schools should provide, if possible, a special classroom, for music practice, a classroom that will be used only for music and will be equipped with musical instruments, ICT applications and whatever could improve and enhance music learning.

Conclusion

The present study investigated which philosophy (praxial or aesthetic) of music, educators of music employ in public secondary music education schools in Greece today and the reasons they do so. The study also made an effort to trace teachers' opinions regarding ways they

suggest that would help them implement their preferred philosophy of music in their school musical practices. The study followed a qualitative approach using interviews and conducting a focus group discussion as the research tools for data collection.

Based on the aims of the research and the research questions of the study, it appears that the majority of the teachers opt for the praxial philosophy of music which they think is important in music teaching, learning and making. These results agree with what Elliot (2007) and Elliot & Silverman (2017) have argued about the importance of the praxial philosophy in music. According to the teachers, despite some of the suggestions included in the music secondary education curriculum about music practice, practicing music in the classroom is not feasible for a number of reasons. Some of them, reported by the teachers, are lack of instruments in schools, lack or principals' consent to the teachers' ideas implementation, lack of understanding on behalf of colleagues, lack of funding and more. They also explain that the importance of music practice is not appreciated by colleagues and principals as it should, although the demands of the school staff from them, as music educators, and their contribution to school events is taken for granted.

The results of this research do not agree with what the literature discusses about the use of the praxial philosophy in music in the schools of many countries across the globe (Westerlund & Vakeva, 2007, Jiaxing, 2007, Tzouna, 2020) and agrees with what Kteniadaki (2008) or Perakaki (2014) argue about the absence of the praxial philosophy of music in Greek schools. The teachers believe that the government should learn to appreciate the need of 'praxis' in music and introduce or establish necessary changes that will allow the use of music practice in public schools. What is more, the teachers suggest that municipalities could greatly contribute financially to allow the equipping of music classrooms in public schools for the 'praxis' of music to take place.

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Teaching educational process and citizenship in the contemporary digital environment: A literature review

Pliogou Vasiliki
Assistant Professor at the University of Western Macedonia
vpliogou@uowm.gr

Grivopoulou Angeliki
Phd Candidate at the University of Peloponnese, Director SDE of Messolonghi
agrivopoulou@gmail.com

Karakatsani Despoina
Professor at theUniversity of Peloponnese
despikar@yahoo.gr

Chatzis Ioannis
PE04.01 Physicist, MSc ICT in Ed., PhD, Director at the DIEK of Messolonghi
yhatzis@gmail.com

Abstract

The rapidly changing reality, which has been influenced by the development of technology and the industrial revolution since the 19th century, has largely weakened the teaching profession and the forms and type of professional certification. This weakening also depreciates the idea of citizenship, which is largely conveyed during the education process. Contemporary education (4.0) is focused on practical education, where the space for shaping attitudes and creating behavior patterns is marginalized. The relationship between education and industry related to socialization and culture-forming processes is part of the development of individuals in societies and part of a broader formal development plan for different types of state and national organizations. In order to understand what teachers think about the meaning of digital learning in everyday school life and work, it was necessary to undertake an investigation from the perspective of the teachers themselves.

Key words: Education 4.0, educational process, digital citizenship education, the role of teachers

Introduction

The recent COVID-19 pandemic has revealed that an education and training system in connection with digital age is crucial for all citizens. However, the coronavirus crisis has also shown that the familiarity with digital tools remains limited (Darling-Hammond, L., & Hyler, M. E., 2020). The digital revolution has changed the education system that must meet the needs of the globalized information society. The goal of education is no longer simply the transmission of knowledge that is not possible to acquire, but the development of skills for its management and application, when and where needed. Also the necessity to focus on the existing 'digital divide' (Ragnedda & Muschert, 2013; Radwan et al 2022; Kearney et al, 2022) and the 'digital gender divide' (the discrepancy between women's and men's access to digital information and technology) has been revealed as a situation of emergency (Kalolo, 2019).

The students have changed radically and as Marc Prensky underlines "today's students are no longer the people our educational system was designed to teach" (Prensky, 2001, p. 1). There is a complete "discontinuity" with the educational past because students think and use information fundamentally differently from their predecessors. They are "digital natives" (Prensky, 2001). The term "digital immigrants" describes people that usually have networking and interaction skills that they acquired later in life and are opposed to "digital natives" who

are usually younger and students. Indicatively, "digital natives" prefer to use social networking platforms, while "digital immigrants" usually use asynchronous means of communication (Jarrahi & Eshraghi, 2019).

The adaptation of education to the new data goes through the readiness and adequacy of teachers and the modernization of their role. The modern educational reality requires vigilance and readiness, continuous training and information on new educational practices (Güneş & Bahçivan; 2018, Pangrazio et al., 2020). The familiarization with new technological tools and challenges can change teachers' views of digital citizenship and equip them with the necessary knowledge, skills, competences and attitudes that will transform him/her to a confident and powerful digital citizen and professional agent (Choia et al., 2018; Borthwick & Hansen, 2017).

Education 1.0 vs. education 4.0

The term education 4.0 is linked to the term industry 4.0. Industry 4.0 is based on making use of the latest technological achievements, such as network solutions, artificial intelligence and the automation of cyber-physical manufacturing module. In the subject literature the theoreticians say that this stage was preceded by industry 3.0, i.e. industry based on miniaturization and computerization of production, which had been preceded by the period of "electricity age" (industry 2.0), characterized mainly by the use of electricity in mass production. Researchers define industry 1.0 as manufacturing processes based on a steam engine. By transferring the industrial typology onto education, we suggest the following types of periodization, which extend the time scope (World Economic Forum, 2018).

In the first approach, the level of formalization can be regarded as the determining factor. In this elaboration, education 1.0 embraces the period of the ancient times in which formal requirements for school founders did not exist. Education 2.0 lasted until the industrial revolution during which the standards of oligopoly (state-Church) in the ownership structures did not exist. Education 3.0 permitted a private sector, under the condition that it would not dominate the market. Education 4.0 means a total commercialization of the educational system on the assumption that a controlling institution would be established on the level of the state, local authorities or membership organizations of the owners of scientific institutions.

In the second approach, the distinguishing feature is the level of enrolment rate in the respective eras. In Education 1.0, less than 20% of population had a certificate confirming the graduation from an educational unit and in education 2.0 – from 21% to 50% (World Economic Forum, 2018). In education 3.0, the level of certification reached 90%. Education 4.0 is the ideal type with 100% of population having the certification on the level of secondary school or university. This assumption also requires accepting the condition that the participation in education on a secondary school or university level is not based on the motivation of obtaining the certificate confirming the years of education, but rather on the willingness to gain knowledge, to improve skills and competences.

The most inclusive conceptual model of the division of education into 4 stages is the one associated with the educational objectives. In the first period (1.0) the main emphasis was placed on knowledge transfer, in education 2.0 knowledge was as important as practical skills, education 3.0 included the attempt to create balance between knowledge, abilities and competences and education 4.0 concentrates on knowledge transfer and acquiring specialized skills and the social competences necessary in the narrow segments of the labour market. Students and teachers should be prepared to become productive contributors of future economies and responsible and active citizens in future societies. In this new context four skills are considered as necessary for students: 1) Global citizenship; 2) Innovation and creativity; 3) Technology; and 4) Interpersonal skills (World Economic Forum, 2020). The role

of the teacher and instructor becomes more demanding and needs a good balance of theoretical and practical knowledge to provide a solid foundation for their teaching.

The socio-pedagogical role of the teachers in the digital age

With the socio-economic changes taking place in each society, the role of the teacher in the social system has changed as well. The initial role of a teacher was a universal one, which was to act as a guide and mentor who passed specific skills on to his/her students. Depending on the language system the following terms were used to call a person engaged in educational processes: "master", "mentor", "tutor", "counsellor" (Pliogou et al., 2016). Importantly, in the initial period of the functioning of this profession, there were no formal frames of professional certification and holding this social function resulted in an adequate social status given to an individual by a social group (Karakatsani, 2012; Pangrazio, 2019).

As indicated in the literature on the subject, the emergence of the teaching profession was a manifestation of a more general process of differentiation, specialization, and professionalisation of activities that were originally mainly concentrated within the family or a small local community (Flora, 2014). Additionally, those practicing teaching organized themselves into a separate social and professional category. During the last decades, teachers have attempted to help marginalized groups become efficacious and participatory citizens in multicultural nation-states (Banks, 2017).

Thus, a division was distinguished between specialist teachers and general education teachers preparing young students to perform a social function. The teacher always connected with the local community, and their authority played an important role in the community in which the school operated: it influenced not only the teaching youth, but also the shape of the out-of-school environment. However, in the last decades of the twentieth century, the extracurricular role of the teacher was severely limited. The contemporary teacher is mainly focused on didactic and educational work at school. (Banda & Mutambo, 2016).

The digital gap that exists between teachers and students is an important factor that affects teachers' attitudes and perceptions. Teachers who have been taught and trained with the traditional blackboard and chalk, supervisory means limited to the globe and maps, are now called upon to offer their services using advanced digital media. The generation of teachers born before 1980, belongs to the generation of 'digital immigrants' despite participating in the information society using modern media (mobile phones, tablets, computers, etc.). They try to fill this gap and integrate themselves into the digital world (Jarrahi & Eshraghi, 2019). The digital gap with students whose digital skills are far better than their own skills makes them wary of digital technologies and their integration. In this case, teachers find it difficult to communicate since the students now speak another language, different from their own, a digital one. In addition, personal attitudes about whether and to what extent modern technology improves the efficiency of the educational process, are a basic condition for their use in the classroom. Although teachers use digital technology for personal needs as something necessary, the same does not happen in the educational process (Banda & Mutambo, 2016). Familiarity with technology and digital literacy are a two-way process for both teachers and learners nowadays as new technologies must be integrated effectively and functionally into schools, meeting the needs of both (Ribble, 2011).

"Digital Literacy" first emerged as a term during 1980. It was the ability to use and evaluate digital resources tools and services satisfactorily, applying it to lifelong learning procedures (Gilster, 1997). It is described as "the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital devices and networked technologies for participation in economic and social life" (UNESCO, 2018). Over the years, teachers attempt to build students' digital capabilities, using diverse models, frameworks and educational digital applications, in order to support them in their future classrooms.

Teachers emerges as the essential factor that determines the successful and effective integration of digital media in the educational process and practice. Understanding the new constantly changing technological requirements and challenges, a teacher must constantly experiment with new technologies, innovate, promote collaborative and exploratory learning, plan learning activities and learning scenarios, test, reflect and modify/redesign his/her practice appropriately in the direction of active action research. At the same time, he/she evolves from a "consumer" to a "creator" of digital content and a member of the community. In addition, codes of ethics, responsible use of Information and Communication Technology (ICT), and the need to recognize the full impact on the digital health and wellness of users becomes imperative. The need of both learners and teachers to strengthen the "resistance" of the former to the lures of –admittedly- attractive virtual reality is a challenge. The modern school must respond consistently and seriously, strengthening and improving all the actions that take place within the school community, in order to meet the needs of both (OECD, 2016).

The majority of teachers recognize as necessary the need for continuous training and digital literacy in order to meet modern requirements, enriching their knowledge and revising -when required- ways and teaching practices. They believe that re-training will facilitate them and improve their efficiency as they should be able to plan and implement appropriate activities in order to motivate students to actively participate in new learning environments. Those who possess the necessary skills have the ease to respond to the new teaching practices for the utilization of digital education. They are more confident and also positively predisposed. The level of re-training also shapes the degree of new technologies' use (Falloon, 2020).

Digital Citizenship and Education

The concept of citizenship is understood as a status granted by the State to independent individuals, who act rationally to achieve their personal aspirations with the state ensuring equal rights before the law (Jones & Gaventa, 2004). It is sometimes described as an identity associated with the sense of "belonging" and the web of relationships that develop between members of a community, with the primary concern being the collective rather than the individual interest (Jochun et al., 2005). In an attempt to reconcile the first two views, a third perspective wants citizenship to be linked to a practice, which focuses on the common public culture shaped by the individuals' rights. As an identity, it emerges stronger than the individual. Either as a situation, or as an identity, or as a practice, citizenship is closely linked to a web of rights and obligations, especially as it frames the figure of the modern citizen in an extremely complex, multicultural society (Jones & Gaventa, 2004; Conley et al., 2018).

The modern version of the discourse on citizenship will also include terms that describe the multiple modern civic identities and forms of government (Bellamy & Castiglione, 2003). These terms are associated with the existence of a post national model (Keating, 2012), since the model of a sovereign nation-state no longer constitutes a satisfactory framework and functional definition of the term of the political status of the subject. As the modern social structure constitutes a new technological paradigm, a new knowledge economy, three complementary axes emerge and spring up as a "rhizome", composing flexible nodes which transcend spatio-temporal anchorages and coexist in "flow spaces" (Castells, 2010). Society is based on information, global governance and networking. Therefore, citizenship acquires a global content, taking a political, economic, social and cultural dimension (UNESCO, 2015), where the access and the sharing of information is done to and from a complex network of social partners.

We must also underline that the notion of citizenship expands and changes nowadays with citizen participation in the new technology era, as it can be observed in "spaces" with blurred boundaries and sometimes in asynchronous spatio-temporal entities. That is why we speak of a new kind of citizenship which is strongly connected to the digital era and its requirements.

With the growing use of digital technologies in everyday life, we faced an important issue, how better to prepare citizens to make appropriate use of these technologies. As a result, a new concept has entered, the "digital citizenship". A digital citizen is a person who can criticize online information, can communicate via digital technologies, can produce and consume in a digital environment, complies with the ethical rules while conducting these behaviors and is aware of their rights and responsibilities. The ability to participate in an online society (Mossberger et al., 2007) is a simple acceptance of the definition of digital citizenship with particular emphasis on internet use and less on other digital, interactive media (Staksrud et al., 2009). Hobbs and Jensen (2009, p. 5) define digital citizenship as "the skills and knowledge that are necessary for an individual to be able to function effectively in an increasingly demanding social media environment. In this, the separation of the public from the private sphere remains invisible, highlighting new ethical challenges and at the same time a (different) network of opportunities in the whole population that is in direct and daily contact with the new technology". Simsek & Simsek (2013) link digital citizenship with new media literacies in a new democratic context, where the latter provide opportunities for greater, more active and insightful participation and response to needs of modern social structures.

Digital citizenship is a complex and multidimensional concept which has only been recently analysed. There are studies that focus on the impact of individual background and different characteristics such as age, gender, socio-economic status on political participation and digital literacy, which are used as a basis for the construction of digital citizenship (Gleason and von Gillern, 2018). Age and gender, but also the years of teaching experience, the school level, the subjects that had been taught as well as the experience with Internet use seem to affect teachers' levels of digital citizenship (Chu & Garcia, 2014).

It acquires a special content as it addresses, on the one hand, a heterogeneous (in every aspect) audience. On the other hand, it maintains an exclusively mediated character, as it presupposes the use of digital media for communication, information and interaction. Education -at any level and in any way- is considered perhaps the most basic and powerful means of exploiting the benefits of the wealth of technological achievements and the progress of human intellect in this field. According to recent literature digital citizenship contains the following elements: digital ethics (ethical and responsible online behavior, awareness of political, social and cultures issues coming from the digital technologies, digital rights and responsibilities), media and information literacy, participation-engagement and critical resistance which focus on the role of transformative participation through the use of the Internet and the critique to the power relations and structure of the digital environment (Choi, 2016; Simsek & Simskek, 2013). Recent literature also emphasizes the impact of psychological variables on users' abilities and competence to use the Internet, their online engagement as well as the construction of digital citizenship (Livingstone & Helsper, 2010; Paul & Glassman, 2017). The psychological characteristics seem to be also an important factor that influence teachers' levels of digital citizenship. However, we must underline that there are few studies focusing on the relationship between psychological factors (Internet self-efficacy and Internet anxiety) and teachers' levels of digital citizenship.

The concept of digital citizenship is analyzed either in a narrow way giving emphasis on the ethical and responsible use of the Internet and other digital technologies or in a more broad and multidimensional way in connection with the following five aspects: technical skills, networking agency, local or global awareness, internet political activism and critical perspective (Choi, 2016). Recent analyses of digital citizenship focus on some specific digital capacities that should be developed through teaching and learning: the protection of intellectual property and privacy, the respect for others online and the ways to avoid cyberbullying and deal with fake news (Ohler, 2012). Some other researches underline how important it is to help students become digitally informed, actively engaged in communication with others online as well as to participate in a responsible way to various elections and other

political and social procedures (Warschauer, 2004; Citron and Norton, 2011). In all aspects the role of teacher is underlined as an important factor of a responsible, informed and active digital citizenship (Greenhow, Robelia & Hughes, 2009; Kimmons & Veletsianos, 2015; Richards, 2010; Milenkova & Lendzhova, 2021).

Digital citizenship and teachers' role

The contemporary citizen is "immersed" in the media. ICT are becoming an integral part of the social activity of individuals and groups. Today, it is difficult to accept the possibility of a technological lockdown as such an event could bring negative effects not only for ICT systems but also for the mental sphere of citizens (Bria, 2017; Falloon, 2020). The teacher has an important role as a link to the knowledge community, or state of the art in digital citizenship. It is crucial in this process that teachers realize their role and assume their responsibility as digital citizens and educators of digital knowledge, skills and competences. A special training on digital citizenship and awareness is very important and should be connected to enhanced content knowledge and pedagogical theories and practices (Jimoyiannis & Komis, 2007).

Contemporary teacher competences should include the effective ability to implement ICT solutions in the teaching process. In some items of pedagogical literature, this education is called multimedia education (Joshi, 2012). The role of the teacher has already changed in part depending on the extent that new technologies have been introduced in schools and the educational process. There is an increasing realization that its traditional role has passed irrevocably and it becomes a driving force for the search, creation and encouragement of self-improvement from being a master of knowledge and having ability to transmit. New technologies and their pedagogical utilization must be done in such a way that the full development of students is sought and it is in line with the modern digital age. The teacher should be the regulator in order to serve the pedagogical purpose and digital literacy becomes an integral and irreplaceable part of the educational process. Teachers have to encourage the development of skills like interactive learning, collaborative and independent learning among the students in order to transform them into life-long learners and innovators (Yondler & Blau, 2021).

Apart general teaching skills, some more skills are needed and a teacher should play their role effectively as a facilitator of learning. It is interesting to underline the importance of networking skills which facilitate collaborative learning, communications skills and social media communication. It is also very important to have the appropriate skills for the management of Knowledge which is a key skill for a teacher in a knowledge-based society. This includes the possibility to find, analyze, evaluate, use and disseminate information within a particular context always in connection with educational goals and pedagogical uses. It is very important to combine learners' needs and desires with the objectives of the curriculum. Another interesting analysis of Choi et al. (2017) has created a Digital Citizenship Scale (DCS) for the analysis and interpretation of teachers' levels of digital citizenship based on the following elements: technical skills, local and global awareness, networking agency, internet political activism and critical perspective. Other researches have compared the role of teachers' participation in social networking sites to digital citizenship capacity and ability (Kimmons and Veletsianos, 2015) and other have analysed the impact of psychological variables on users' competence to successfully use the Internet and on their degree of online engagement and digital citizenship (Livingstone & Helsper, 2010; Tomczyk L. 2020).

Digital gender equality and citizenship

For both women and men it is very important to take advantage of the digital transformation, which is considered as a keystone for inclusive and sustainable economies and societies. However, women still face problems and anxiety in the access and use of digital tools or suffer from 'technophobia' (Bello and Galindo-Rueda, 2020). Cultural barriers, biases and stereotypes related to femininity (Wajcman, 1991), the socialization process and education can affect their understanding and their expectations. Experience such as cyber-bullying and online harassment can have a negative impact on women's' contact with technology as well as on their choices of career paths that are connected with the use of digital techniques and materials. This situation is related to the 'masculinity' of technology (Tiainen & Berki, 2019) and to the 'digital gender divide' and can provoke digital illiteracy (OECD, 2018). Another problem is the "glass ceiling" phenomenon, which describes the invisible barrier that keeps women from rising beyond a certain level in their career in connection with digital technology (Larsson & Viitaoja, 2019).

We must underline that education systems play a very important role in developing digital capacities of students and give the same chances to women in this field. The role of the curriculum, education activities and practices is crucial because it will help students acquire the necessary knowledge, skills and competence and recognize their own biases and stereotypes. The transformation of school activities and content based on digital technology in an equal way and approach for both gender will help all students understand their capacities and give them new opportunities to fulfil their aspirations in education and in the labor market (Bello & Galindo-Rueda, 2020). The role of teaching professionals, educators, school leaders is very important in this field.

Conclusions

Despite the fact that the use of ICT gains more and more influence by 'penetrating' the daily life and practices of the whole population, - especially of the younger age groups - digital literacy is still a question as it has not always an obvious and universal acceptance (Knight Commission Report, 2009). Research findings show significant inequalities in the use and dissemination of new technologies in the field of education and in the consequent course of students/learners, with a corresponding deficit in understanding the importance and application of the principles governing their status as digital citizens.

A significant number of teachers have a negative attitude towards new technologies and their use in the educational process, although they acknowledge their positive impact. They focus on the negative effects they can have (Lloyd & Albion, 2005) implying that the use of technology makes them particularly concerned and cautious. Some of them see technology as threatening (Phelps & Ellis, 2002) or don't feel very safe and confident in front of their students (Nunan & Wong, 2005). Nevertheless, there are those who, regardless of their personal perceptions, believe that the conditions in the educational process today are such that teachers are somehow obliged to use new technologies in order to be part of the digital school and to show their qualifications. The active involvement and support of teachers has a strong impact on the teaching process and effectiveness of the teaching-learning process. The level of success in the integration of new technologies in schools does not depend on the quality of the technology but rather on the teachers' support (Romano, 2003) and on teachers' positive disposition and attitude (Deniz, 2007).

The speed of changes and the development of modern information and communication technologies mean that the education system faces new challenges, but also new opportunities. The education system, as it should prepare students to cope with the future life, should anticipate and respond to the following changes rather than lagging behind. The influence of new technologies on the sphere of social activity is enormous and thanks to this phenomenon the role of the teacher is also transformed. It is important that educational

institutions organize teacher training programs for the use of new technology and different innovative techniques which will have a positive effect in using and integrating technology.

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Evaluating secondary school students' ability to develop Historical Empathy through the Press

Kantaraki Sofia
Phd Candidate at University of Thessaly, History teacher
skantaraki@uth.gr

Abstract

The purpose of this study is to investigate the influence of press, specifically newspapers, on the development and cultivation of historical empathy of secondary school students. Our study focuses on testing students. After reading newspapers, they are asked about the Asia Minor catastrophe, as an exercise in empathetic content and logical understanding, to approach historical events, without necessarily accepting them, and to describe their perspectives. The study seeks to investigate whether press as a historical source can contribute to productive thinking through the mental revival of the events described. The analysis of students' responses focuses on aspects of historical empathy: historical formation, logical understanding, emotional elements. The results showed that all students experienced mentally specific historical details of the past but mainly developed emotions, while in the actions of the historical figures they recognized implied purposes by putting themselves in a similar historical context.

Keywords: Historical Empathy, press, newspapers.

Introduction

According to Akton, history must free us not only from the excessive influence of other times, but also from the excessive influence of our own time, from the tyranny of the environment, of the air we breathe (Akton, 1906, 33). Thus, we realize that historical events cannot be completely objective, they acquire this quality, as historical, thanks to the importance given to them by the historian and his time (Carr, 1999, 204). But how are the events and their protagonists captured in the communicative unprecedented environment of Press when news are primarily politically directed and dominate reality that is constructed via press. Not only that, but also how are news finally imprinted in the readers' and students' mind? Journalists' narratives as well as descriptions and narratives of historical events could potentially help students understand historical developments and events, which are often somewhat abstract (Lee, 1984).

There is no doubt that human mind is drawn to the idea of the finite, especially when it has been fatal to the evolution of thousands of people, such as the Asia Minor catastrophe. Students with a specific historical frame of reference are asked to identify sources of possible historical actions, to understand the facts or even to identify the beliefs from which the historical figures could be drawn in the newspapers. The friction of students with the journalistic discourse of another distant era is not only superficially and in the context of a simple intra-subject analysis (language, style, etc.), but mainly by the effort to cultivate empathy and a higher consciousness based on journalistic records for socio-political views that reflect stigmas of a sad repetition. Connecting the past with the experiences-hearings of the present, which concern the contemporary refugee and immigration problem through the recent images of refugees fleeing to Europe, students are also asked to reconstruct aspects and aspects of the refugee using information material.

Having sufficient data, students try to understand the mentality and way of thinking of people of a specific period, combining imagination with knowledge. During one observation of classroom practice, we heard a history teacher asking the students the following question: 'Can you explain that?' or 'what do you think about that?'. After all, Husbands and Pendry (2000) find that students are encouraged and effectively place themselves in the historical

period when they are called to "imagine that they are ..." or "to take the place of.". It is a process that students succeed in combining emotion with logic, achieving great results. The research question of the present study is to find out if students, after reading newspapers of the examined era, are able to "capture" historical concepts (structural and content), to identify the causes or the nature of the historical change, to experience the image of the situation through emotional alternations thus giving meaning to the past. The originality of this study lies not only in the use of press as historical source, but especially in the use of newspapers of the time when the events of the Asia Minor catastrophe unfolded, meaning the year 1922. In this context, it is examined whether historical empathy is achieved as a tool for development of historical consciousness, what aspects of it emerge, and whether this can lead to a deeper and more "clear" understanding of historical knowledge. It should be noted that the present study was conducted in the context of the training of the Pilot Programs of the Experimental Schools of the Greek Institute of Educational Policy, during which a teaching scenario entitled "The Asia Minor War on the Press" was developed.

Historical Empathy in the school environment

Regarding the interpretation, value and contribution of empathy in teaching, several Greek research studies have already been submitted on the subject that have contributed the most to its perspectives and extensions in education (Kourgiantakis, 2005). For this reason and for the needs of the research we will refer roughly to general remarks and divergent views.

Already from the 18th century the concept of empathy is presented in the writings of the philosopher and historian Giambattista Vico (Pompa, 1971), while its protagonist in the field of history is generally considered to be the English historian and philosopher R. Collingwood, who through his work "The Idea of History" 1946/1994, essentially established the concept of "historical empathy" or "sympathetic understanding" (Pattiz, 2004). According to Collingwood (Foster, 2001, 60-63 & Smirnaios, 2008, 170-171) the past is made up of actions, not events. Historical knowledge is fundamentally different from knowledge of the physical world because it includes knowledge of both the external / observable and the internal / unobservable. By "interior" Collingwood meant the thoughts of people involved in an act and was what actually provoked or pushed them to act (1946/1994).

Therefore, it would be desirable to reconstruct this inner part through empathy, to capture mentally through the historical evidence the thoughts of the people of that time, in order to understand it with energy and to "integrate" in its spirit.

In this context, the concept of empathy appears more and more often in the vocabulary of historical school education, although there are also objections and doubts as to whether this key concept of Collingwood can contribute to the historical understanding and teaching of history (Jenkins, 2006). Thus, for the past two decades, the concept and function of historical empathy in the school environment seems to have gained fans as well as important critics.

Initially, Lee and Ashby's empirical contribution, through a broad research framework in England (CHATA program, Concepts of History and Teaching Approaches) opened a field of dialogue on the subject of rational understanding or perspective conception. They believe that the history teacher's effort should focus on giving students ideas that are stronger and more effective than they were at the beginning of learning, and that teaching through historical empathy is, to a degree, an exercise in providing students with multiple and different assumptions and strategies for them to reflect on and take action on (Lee & Ashby, 2001, 25).

However, for Ashby-Lee students who understand what counts as empathy and have learned the steps that lead to achieving it, have not only taken a step forward in history, but are much better able to face the modern world (Ashby & Lee, "Children's concepts", 64, in, Kourgiantakis, 2005).

For VanSledright, on the other hand, studies in American schools have also shown that through press students acquire their own historical perspective on events and indirectly perceive and make sense through multiple representations of people and situations today

(VanSledright, 2010, p. 123). In the same vein, Foster, also, argues that students should clearly have a relevant knowledge of the history and chronological context before re-emerging in the chosen subject, but considers that obscuring students with quantitatively excessive information material, at least in the initial stage of search, probably not productive. The history teacher at school should direct his students to ask themselves about the reasons or prejudices that may have influenced them, in order to understand more deeply a historical source or an act of the past (Foster, 2001, 175-178). Leading researchers such as Kitson, Husbands, Steward (2011), and Barton, Levstik (2004), have supported this perspective with their studies. But the most important but recent contribution to empirical research and study of historical empathy in the school environment is that of Australian University of Auckland professor Martin Charles Davison on *"It's Really Hard Being In Their Shoes". Developing Historical Empathy in Secondary School Students* (2012), who in written communication with the author, seemed to share the above positions. The research data he presents quite positively subverts the landscape regarding the study of historical empathy and its contribution to historical education.

On the contrary, the postmodern historian Jenkins argues that the regeneration of the past cannot be achieved, since imagination helps in its regeneration only through the sources. In particular, he argues that we study the history via the historians' thinking and not that of people of the past, and this may mean that the past seems to be unrecoverable through empathy, thus insisting on its controversial ideological function (Jenkins, 1991, 47). Walsh, Stanford, Knight, and Brickley follow the same ideological line, questioning its effectiveness, as the method has been timidly associated with progressive movements in teaching history in England, and empirical research remains scarce, especially if it is feasible, but also desirable in school (Cooper, 2011, 87). The period of questioning the role of historical empathy is far from today, when apparently digital technology, new pedagogical teaching methods have managed to drastically change the educational reality, so that it is directly involved in school events. So are newer empirical studies subverting this landscape and how?

In this direction, historical empathy can support a student-centered, active, exploratory, exploratory, collaborative learning by creating a framework of interaction between teachers and learners through experiential activities (Raptis & Rapti, 1999). In general, therefore, it is interesting to study further the connection between the contribution of the printed press and historical empathy as a connecting bridge of approach to historical knowledge, understanding and consciousness, without this meaning that other skills, such as spiritual, mental and psychological, are eliminated at the same time. etc. related to the cognitive objectives of the course teaching.

Press as a primary historical source

According to many researchers, press as an ideological mechanism, as a political shaper, as a source of information (Karikopoulos, 1984), recording events, attitudes, views and mentalities, becomes a source for history (Bakounakis, 2016). On the other hand, as a means of communication, it has the power to provoke events and in turn to form attitudes, views and mentalities. In short, press disseminates knowledge and at the same time reorganizes the practices and standards associated with it, while shaping and preserving the collective memory.

Preparing students

Initially, the teacher based on the pedagogical principle of the occasion presented in the computer lab in a short presentation (10 minutes), using presentation software and video projector, making a plan of historical structure of the period, with selected photos and maps from the course of the Asia Minor war.

We consider the anniversary year (2022) of the Asia Minor catastrophe to be crucial, for which some students have an image from personal hearings from their family environment or

keep it as an inherited legacy with objects (heirlooms) of their relatives (utilization of previous knowledge). In addition, their statements to the plenary of the class contributed to the development of a dialogue. At the same time, the causes of the campaign, the events and its results were presented and discussed, without detailed details, so that the students know the historical context, before starting, the search for more specific information. The teacher noted on the whiteboard basic historical terms (structural or content) of the unit while explaining and analyzing their meaning (e.g disaster).

The research process

Sample/Population
The sample of the present research was all the students of the 3rd grade of Junior High School. The number of 51 students can be considered a sufficient student population to be a reliable sample (Cohen & Manion, 1994; Wisniewska, 2011). The research was conducted during the second period of the school year 2021-22, in an urban school in Volos. The anonymity of the participants was respected throughout the research.

The method
Our study focuses on testing the views of secondary education students on how to perceive and understand the events of the Asia Minor Catastrophe and its consequences through newspaper excerpts from press of that period. At first, the theoretical framework was presented and after that a questionnaire was made related to our research question. As a methodological tool we used the questionnaire in the context of qualitative research analysis with open-ended questions. The open-ended questions allow the answers to be collected in the "natural" language of the respondents. These questionnaires according to Cohen and Manion are used in combination with other methods to conduct a survey (Cohen & Manion, 1994). It is the most common methodological tool of educational and social research which is presented as a form in which the answers or reactions of an individual are noted (Bell, 1997, 121-139).

The purpose of this methodological tool is to measure attitudes, opinions and perceptions. The primary data obtained from the questionnaire (descriptive answers) were processed with the methodological tool of content analysis (qualitative analysis), through which the data categories and data and the correlations between them emerged (Cohen & Manion, 1994). After all, in research, content analysis has the greatest importance, as its main purpose is to take a verbal, symbolic non-quantitative document of a society or a culture and to transform it into qualitative and quantitative data. The way they were conducted gave the children the opportunity to respond as freely as possible. The occasion was the creation of a relevant scenario for the needs of training in the New Pilot Programs of IEP, according to which the trainees are invited to implement a teaching scenario of the course they teach. In combination, research-action was used, in the form of reflective inquiry, as a method of "improving daily practice, which has a beneficial effect on the people involved in the educational practice" (Kemmis, 1985, 38). This practice can lead to an improvement, both in practice itself and in its understanding but also in the situation in which it is practiced (Carr & Kemmis, 1986). In the context of action research, the teacher and the students participate as equal collaborators and co-researchers, they think and reflect on the learning strategies - in this case - they proceed to critical analysis, they interact and they strengthen their collaborative skills (Somekh, 1994).

The research tools and the method of data collection
The students were initially given targeted excerpts and headlines from specific newspapers of the time, which covered the events of the catastrophe. The required time was given for them to study, while the teacher smoothed out language difficulties due to their specificity

and gave explanations. The students then completed the questionnaires during the history lesson. With these questionnaires, the initial attitude (feelings) of the students / three towards the events, and the skills cultivated with the educational practice of empathy were investigated. It is clear that as historical skills are explored more effectively through tests involving open-ended questions and free answers (Dickinson & Lee, 1978; Ashby & Lee, 1987; Sanson, 1987), questions have been constructed to explore historical events through historical sources (e.g. , you can identify the motives of the actor or what led to the specific action, how you evaluate the actions… etc.). In particular, the temporal function of empathy was studied, that is, whether it helped to develop motivation and activate the interest of the participating students / three (Barton & Levstik, 2004; Kosti, 2016) (indicatively, did you find this method interesting? facilitated / helped you in the study and understanding of History;).

The questionnaire

The questions that the students were asked to answer are the following:

1. "How do you feel about the title of the report?"
2. "Imagine that you are in the position of the refugees of Smyrna, as described by the authors of the articles. How does that make you feel?
3. In the material given it is mentioned that the Kemalists (soldiere of Kemal) committed horrible atrocities. Why do you think they did this?
4. Do you have any concerns in the newspaper reports about the attitude of foreigners towards the events? Document your answer.
5. Do you think that the way we approached this issue helped you to study and understand it better? Justify your answer.

Limitations of the Study

We must take into account the limitations of our study. The study is subject to certain methodological limitations. The sample/population cannot be considered representative, as it comes from a school in a classroom with a small sample of students. Moreover, it concerns exclusively Greece, so our conclusions cannot be generalized outside it. This is because the results of the education system are different and proportional to the background of each culture and country. Finally, our study is cross-sectional, which means that all our data were collected in a short time (Babbie, 2011). The disadvantage of our stratified-static data is that we cannot draw a causal conclusion about our variables, such as the direction of the correlations of our model.

Findings/ Results

The students' answers to the questionnaire were recorded in order to accurately state what the respondents had said. The method of thematic analysis was followed by the recording, counting and coding of responses. This qualitative approach seeks in-depth investigation of the views and experiences of specific individuals, regarding a phenomenon, in order to obtain the result that researchers can process (Mantzoukas, 2007). To achieve this goal, the researcher selects "deliberate sampling" selecting individuals and locations that will help him understand the central phenomenon (Creswell, 2011). The information obtained from the analysis of these responses was categorized into specific themes, so as to make it easier to understand the historical and at the same time emotional perspective of the students (indicatively, how would you feel if you were in the refugee position, answered, fear, terror, despair, etc.). We believe that their answers were both honest and targeted, as well as that the attempt to reach them was successful and they were given a step to draw conclusions for our research. All the answers that describe the answers-reactions of the students-readers regarding their feelings and thoughts were categorized based on the words they gave. Additionally, the answers of the students / three were short, with two or three words (indicative, fear, despair, horror, hatred, etc.), as the questions were oriented in this direction,

ie clear and unambiguous (Babbie, 2011, 398). According to Tzani & Kechagias (2005) "in qualitative analysis, what is important is what is often seen, is the number of times the concept appears, phrase, etc., this is the criterion of importance". In this context, the calculation of the frequency of occurrence of some words or phrases in content analysis with in vivo codes, acquires special importance, because it can reveal the deeper dimensions of a phenomenon (Bryman, 2017, 329). Qualitative data were very insightful concerning the need of new methods of approaching historical knowledge.

According to the student's answers the results are the following:

Question 1. "*How do you feel about the title of the reports*?"

|	
HORROR	**11**
AFFLICTION	**16**
EMOTION	1
PAIN	4
DESPERATION	2
DISAPPOINTMENT	8
PITY	1
SHOCK	1
FEAR	7
SADNESS	16
ANGUISH	1
TERROR	4
DISGUST	2
HORRORS	3
INJUSTICE	4
REGRET	16
COMPASSION	3
ANGER	1
DISSATISFACTION	2
ANGRY	1
HATRED	1
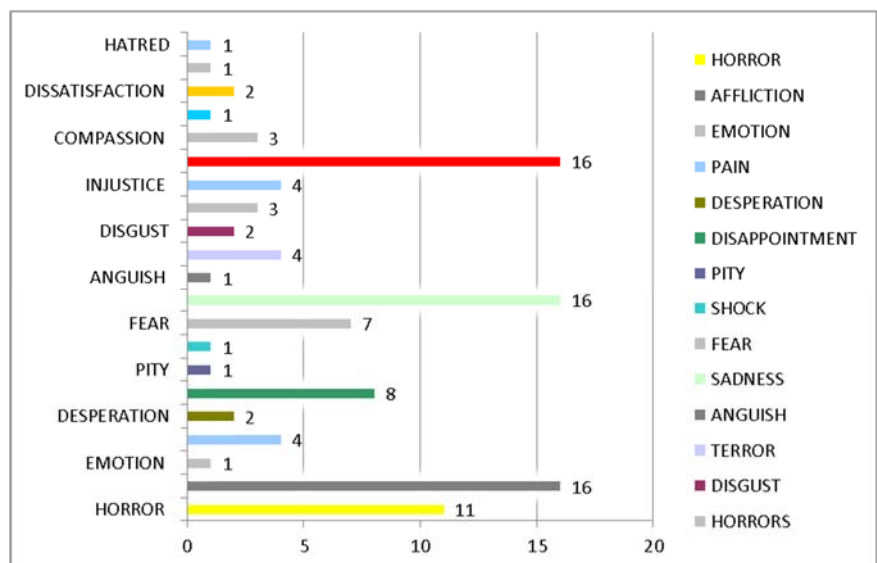
Question 2: Imagine that you are in the position of the refugees of Smyrna, as described by the authors of the articles. How does that make you feel?

|	
FEAR	**17**
ANXIETY	14
ANGUISH	3
WORRY	1
PANIC	2
TERROR	11
DESPERATION	16
INSECURITY	3
AFFLICTION	3
SADNESS	8
INJUSTICE	4
REGRET	5
HATRED	3
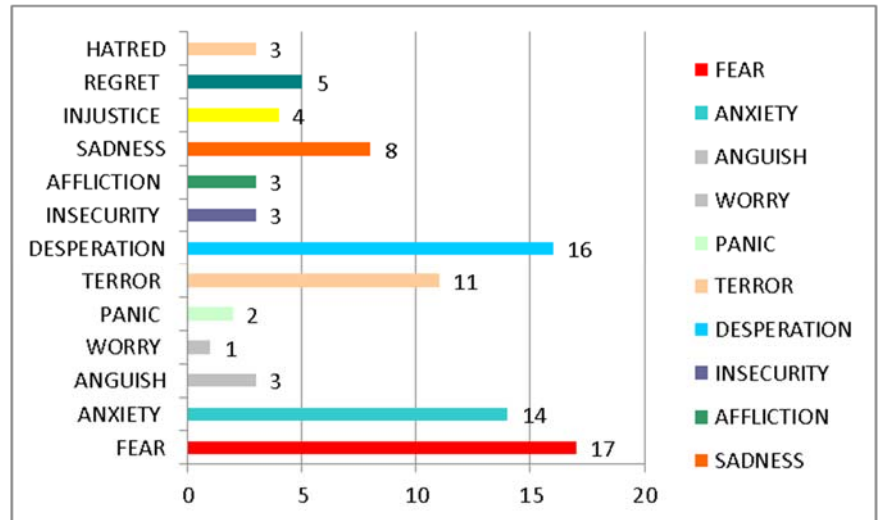
Question 3: In the given material it is mentioned that the Kemalists (soldiers of Kemal) committed horrible atrocities. Why do you think they did this?
Students' views of atrocities are not surprising.

|	
FANATICISM	**10**
HATRED	17
REVENGE	13
NOTHING	18
RELIGION	9
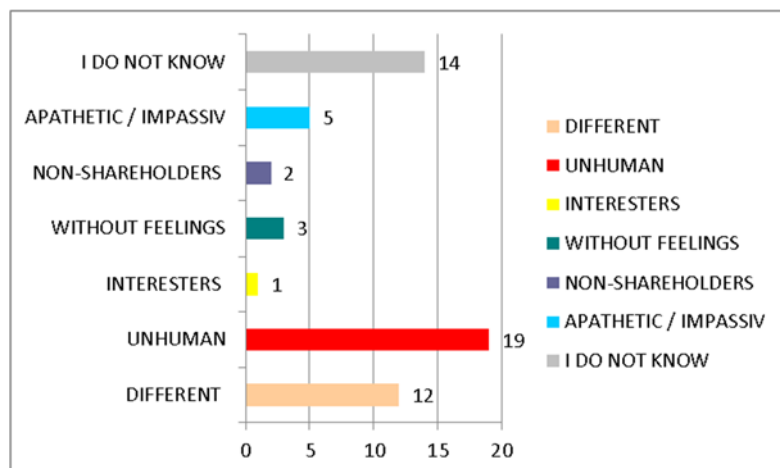
Question 4: Do you have any concerns in the newspaper reports about the attitude of the foreigners (other countries) towards the events?

DIFFERENT	**12**
UNHUMAN	19
INTERESTERS	1
WITHOUT FEEΛINGS	3
NON-SHAREHOLDERS	2
APATHETIC / IMPASSIV	5
I DO NOT KNOW	14
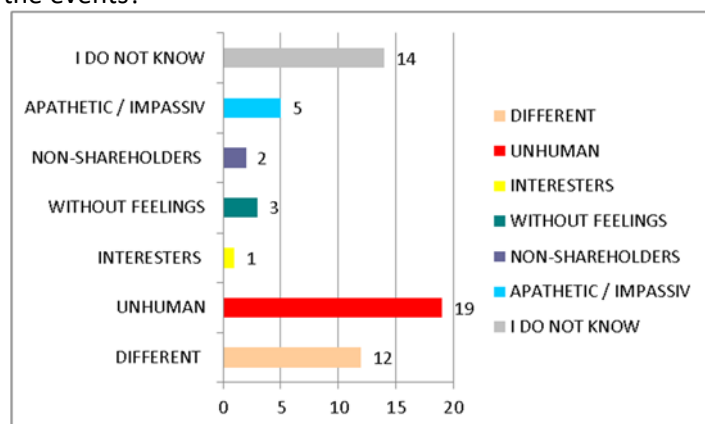
Question 5: Do you think that the way we approached this issue helped you to study and understand it better?

VERY	31
LITTLE	11
AT ALL	3
I DO NOT KNOW	6
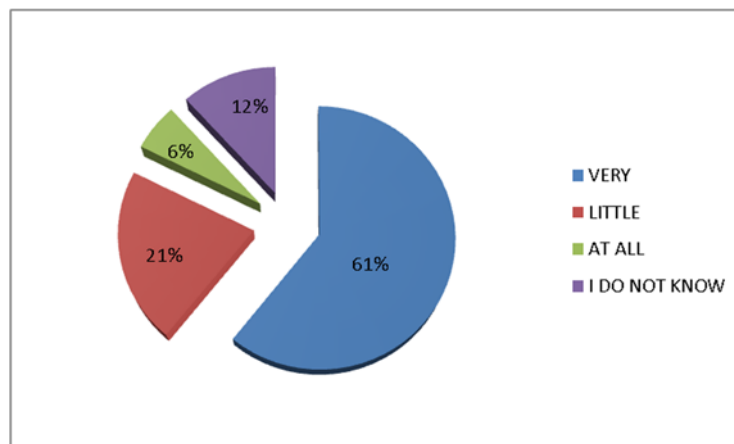
Discussion and Conclusions

Due to the lack of relevant previous research findings, this paper attempts a primary examination. Utilizing the press, newspapers of the 20th century, as a historical source, for the study of this specific unit in Secondary Education, we tried to investigate through qualitative data analysis, its effect on the development and cultivation of historical empathy.

It should be noted that this action-research also functioned as an exercise of empathic content, in order to clarify or not the influence of the Press as an additional and ancillary historical source. It is generally accepted that the teaching and examination of empathy is based on limited research and practical experience, and that "empathizing" may be tantamount to imagining trying to penetrate an experience of the past. We consider, then, whether the environment of a newspaper can benefit students cognitively, pedagogically and emotionally. Although the study was based on a small sample of students, their views were thoroughly tested through thematic analysis, which helped to formulate the following conclusions. Through careful elaboration of their answers and the discussion that followed, after the questionnaire, it was found that students showed particular interest in studying the events of the Asia Minor catastrophe just as the newspapers portrayed it, understanding with emotional identification the position of the actors, either positive for the drama of the inhabitants of Smyrna and the refugees or negative for the invaders but also for the inactive Forces.

The following list summarizes some of the study findings:

1. There was a tendency towards students' "emotional identification" with the facts, and an attempt to "understand their feelings, thoughts and actions" and interpret them taking into account their historical context.

2. The majority of students expressed negative feelings towards the newspaper descriptions of what was happening.

3. Most answers were one-word (indicative, sadness, sadness, indignation, etc.)

4. The majority of students gradually understood the drama of people of the Asia Minor war, through the process of logical understanding. They came close to the past, touched it, researched it, understood it and most importantly associated it with the modern world.

5. There was, however, an obvious difficulty in the linguistic smoothing of the passages due to the cleaning of the newspapers of the time, which slowed down the process.

6. The use of press as a historical source, in the teaching of history, seemed to distract them, specifically in question 5 some students answered indicatively, student 1: "*I consider these sources to play a catalytic role in understanding of events, outside the context of the textbook and help me more by provoking strong emotions* ", student 2:" *it helped me more because it is different to study sources written at that time by those people, despite the history*

book which certainly does not will be exactly what happened ", student 3:" *I did not have to learn parrot* ", student 4:" *they were testimonies and It was like I was there* ", student 5:" *I had difficulty with the language, I did not understand* ", student 6: "*I would like it to be done after the lesson to help me understand it better*", student 7: "*I understood the facts better as I was able to see them from authentic sources, not only dates but also emotions that made me experience the horror of events* ", student 8: «*I am really enjoying the discussions, It was fun!!! Made learning more interactive."*

7. Regarding question 4, about, if they have any problems in the newspaper reports about the attitude of the Forces, the students answered indicatively, student 1: "*the" civilized "forces were probably not so" civilized* ", student 2:" *should be feel ashamed* ", student 3:" *disinterested, without feelings for the people who were slaughtered* ".

8. Some students could not at all oppose the authors' reports on the apathetic behavior of foreign forces and responded neutrally.

9. Also interesting are the answers to question 3, regarding the motivations of the Kemalists for the massacres, which most of them show a deliberate attitude of the students towards what they have read. The next answer, however, attributes the causes to hatred and fanaticism.

10. 61% of students in the 5th question, indicate that they learn better when actively participating in this learning process. Using the newspapers as learning tool in history lesson they discover other perspectives like discovering the past and evaluation it through empathy.
 In conclusion, according to the model of the stages of empathy that Dickinson, Lee and Ashby conclude based on their research, we conclude that through the study of newspapers, students developed a form of advanced historical empathy, as their answers showed that they are based on historical terms in relation to the wider historical context. In the actions of the protagonists they recognized implied intentions by placing themselves in a similar historical place (Ashby & Lee, 1987, 68). After all, the aim was not to reveal the qualitative or quantitative dimension of their knowledge or their level of intelligence, but the gradual investigation of their perceptual ability and develop the empathy as a logical understanding of the facts, through the communicative environment of Press. Historical empathy focuses on identifying with people in the past based on historical knowledge to explain their actions in the past.

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Teachers' Perceptions on Using Educational Technology Applications for Mathematics in Special Education Classrooms

Sakellariou Martha
Ph.D Student, New Bulgarian University,
masakell@hotmail.com

Sakellariou Maria
Ph.D Student, New Bulgarian University,
masakell77@gmail.com

Tsetsila Eirini
Ph.D Student, New Bulgarian University,
tsetsilaeirini@gmail.com

Abstract

Utilizing the capabilities of technology applications can contribute to the creation of innovative educational interventions for students with special needs. However, their added pedagogical value in the learning practice of Mathematics depends on the planning of their utilization. In this context, empirical studies show that teachers are an important factor in the learning process, regarding their attitudes in using technology in the educational process of teaching Mathematics. Aim of this study was to determine the perceptions of special education teachers in using educational technology applications into their classrooms. Qualitative research method was conducted with semi-structured interviews to fifteen teachers working at special education schools in Greece. The content analysis method and certain constituted themes were used to analyze participants' answers. According to study's results, special education teachers acknowledge their competence in using technology applications and they have a positive attitude towards it despite the challenges they face.

Keywords: educational technology applications, mathematics, special education, teachers' perceptions

Introduction

Modern pedagogical and technological developments have led to the development of new educational practices, as well as to the renewal of the educational system in order to be able to support the effectiveness of rapid innovations. The understanding of the field, as well as the way of teaching Mathematics, is characterized by constantly changing approaches, which affect the learning practice in the classrooms. Mathematics school curricula include the need to cultivate and enhance mathematical skills and concepts, such as numbers, fractions, calculations, geometric shapes, problem solving, and measurement procedures, so that students can become independent in their daily lives (Baglama, Yikmis & Sakalli Demirok, 2017; Polat, Yavuz & Tunc, 2017). Students are able to develop these mathematical skills when they participate in an educational environment that is based and structured in their specific learning characteristics and needs. Certainly, students with special educational needs require support for developing academic skills, such as their reading ability, writing skills, basic math skills, social skills, and enhancing their behavioral and emotional skills (Florian & Hegarty, 2004). The development of mathematical skills plays a facilitating role in people with special educational needs and/or learning difficulties. In this regard, students in special education schools must acquire mathematical skills. In general, teachers tend to apply traditional methodological approaches and teaching practices to develop students' academic skills in

special education. However, the problems of teaching mathematical skills have led to the search and utilization of new alternative teaching methods (Goldsmith, Doerr & Lewis, 2014).

In teaching Mathematics, the use of appropriate educational technology applications can enhance the understanding of mathematical processes and the distinction between different factors and elements. At the same time, the promotion integrating educational technology resources in the learning process of Mathematics has led to the need to focus on learning outcomes rather than on students' mathematical activities (Moreno & Llinares, 2018). In general, research that studies and analyzes the introduction of technology in the teaching of Mathematics focuses on the digital tools used, their pedagogical suitability, the learning objectives they set, and the level of their integration in the teaching and learning process. However, there is a significant difference between the theoretical framework for designing educational applications and their empirical integration into the educational process (Trujillo-Torres et al., 2020). In this sense, teachers are necessary for the adequate introduction of technology applications in the teaching of Mathematics. It has been shown that the utilization of digital applications in teaching practices depends on various factors, such as the characteristics and the availability of relevant educational technology resources. Despite the advantages of these applications, teachers are usually distinguished for the low or medium level of their digital skills. Of course, the teachers' perceptions, attitudes, and methodological uses of the educational applications should be taken into account, as well as the differences observed in terms of their gender, age, and educational experience (Buabeng-Andoh, 2012; Trujillo-Torres et al., 2020).

The advantages and capabilities of educational applications can help students with special educational needs in a mathematics classroom and, above all, user-friendly technology applications for students with various types of disorders or learning difficulties (Cviko, McKenney & Voogt, 2014). Therefore, the integration of technology in the teaching of Mathematics for students with special needs is considered important. The present study is expected to enhance the existing overview of the perceptions and attitudes of special education teachers regarding the use of educational applications in teaching practice.

Literature Review

Recent research on the use of educational applications in special education highlights the value of integrating technology into special education classes to support the effectiveness of teaching and learning. Teachers are considered core parameters in integrating effectively technology applications in teaching and learning. However, this integration seems to be still limited, as there are many factors that impact teachers' role. The mere presentation of the educational technology applications in the special education classrooms does not demonstrate their efficacy if the teachers themselves do not adopt them in the learning practice. As a result, recent research studies have focused on addressing teachers' challenges in adapting relevant applications to Mathematics teaching (Buabeng-Andoh, 2012; Zhao, Tan & Mishra, 2001; Wen et al., 2020).

It is understood that the presentation of teaching practices through appropriate methods and strategies in differentiated educational environments, would help both students and teachers to achieve the expected learning outcomes. The development of mathematical skills can be enhanced by guiding students through certain and innovative methodological approaches and offering instruction with effective technological tools (Krawek et al., 2013). Educational technology applications can include any tools, resources, or educational practices that are integrated into the learning process to facilitate the achievement of learning outcomes. It is worth mentioning that these categories include, but are not limited to, the use of computers or mobile devices by students with special educational needs, the use of interactive whiteboards by special education teachers, and various digital learning tools (Okolo & Diedrich, 2014; Parkman, Litz, & Gromik, 2018).

Mathematical knowledge is a tool for solving real-world problems that students experience in their daily lives. Mathematical skills prove to be useful for completing many activities that require a specific display of talent and skills. Also, the cultivation of mathematical knowledge is a necessary condition for the effective professional orientation of students. The skills of measuring, identifying arithmetical units of time, making payments, understanding simple graphs and geometrical shapes, and completing basic arithmetic calculations are some examples of applying mathematical knowledge in daily life. For students with special educational needs, it is necessary to engage in the learning of Mathematics, as their peers of formal development, to develop skills of independent living, conceptual understanding, and knowledge transfer (Akpan & Beard, 2014; Baglama et al., 2017; Okolo & Diedrich, 2014; Wen et al., 2020). Specific educational interventions can facilitate the enhancement of the mathematical skills of students with special educational needs. Such an educational strategy is the multimodal teaching approach, in which teachers present the content, utilizing multiple sensory methods and offering students the opportunity to express their understanding in multiple ways. The second form of educational intervention is differentiated teaching, in which teachers adjust the content, level of difficulty, and duration based on the educational needs of students. Also, the communication and analysis of teachers' thinking is a strategy that benefits the guidance of students with special educational needs to solve problems and transfer knowledge. All of these teaching approaches can be supported by the use of educational technological applications (Wen et al., 2020). The introduction of technological applications in the classrooms of students with special educational needs has a positive impact on students' academic performance, their emotional development, the achievement of their behavioral goals, and the enhancement of their learning motivation. On the other hand, teachers often seem to perceive difficulties in integrating educational applications into the educational process, especially when there is a lack of appropriate training, insufficient time frame, lack of availability of technological resources, and lack of technical support (Buabeng-Andoh, 2012; Trujillo-Torres et al., 2020; Wen et al., 2020).

Aim and Research Questions

The aim of this study was to investigate special education teachers' perceptions on using educational technology applications in their classrooms. Prior research studies have focused on the potential of integrating technology applications into the curriculum of Mathematics to support the learning process of students with special educational needs. To address the aim of the present study and determine teachers' views and attitudes towards using educational applications in teaching Mathematics, the following research questions were asked:

- What are the perceptions of special education teachers about their competence level regarding the use of educational technology applications in teaching Mathematics?
- How do special education teachers evaluate the efficacy of educational technology applications for students with special educational needs?
- What are the challenges faced by special education teachers in terms of utilizing educational technological applications in teaching Mathematics?

Research Method

In the present research study, a qualitative research approach was used to investigate the perceptions of special education teachers in utilizing educational technology applications in math classrooms. The research was conducted with semi-structured interview technique to collect data from teachers' answers. Qualitative approach is considered most fitting for revealing teachers' views and competences in a realistic and holistic way (Creswell, 2016).

Participants

A total of fifteen special education teachers were recruited via e-mail and social media notifications to participate in the present empirical study who had been working as Math teachers in special education schools in Greece on the current academic year of 2021 – 2022. A letter of informed consent was given to all participants, to obtain approval and to express their voluntary willingness to participate. Teachers had to have a degree in special education and with experience in teaching Mathematics in primary and secondary special education schools. The demographic and professional characteristics of the participants are shown in the following Table 1. More specifically, eight male and seven female special education teachers participated in the present empirical study, of which ten teachers work in secondary special education school unit and five teachers work in a primary school unit. Ten special education teachers have one or more Master's degrees in different academic fields, three of the participants have their Bachelor's degree in special education and only two participants have a PhD. The majority of special education teachers are in an age between 25 and 45 years old (n=10) and four of the participants are over 55 years old.

Table 1. Demographic and Professional Characteristics of Special Education Teachers

Participants	Age	Gender	Educational level	Type of special education school
P1	31	Male	Master's degree	Secondary education
P2	36	Female	Bachelor's degree	Primary education
P3	32	Male	Master's degree	Secondary education
P4	28	Female	Master's degree	Secondary education
P5	42	Female	Bachelor's degree	Primary education
P6	55	Male	Master's degree	Secondary education
P7	59	Female	Master's degree	Secondary education
P8	62	Male	Bachelor's degree	Primary education
P9	29	Male	Master's degree	Primary education
P10	30	Male	Master's degree	Secondary education
P11	32	Female	Master's degree	Secondary education
P12	36	Female	PhD	Primary education
P13	41	Female	PhD	Secondary education
P14	46	Male	Master's degree	Secondary education
P15	54	Male	Master's degree	Secondary education

Semi-structured interview design

The study was conducted using a semi-structured interview in order to collect the data relevant with the aim and the research questions. The semi-structured interview form of questions was developed as the result of a systematic and analytical overview of previous theoretical and empirical relevant studies. The interview form included six open-ended questions prepared to ask participants about their perceptions, experiences and attitudes on utilizing educational technology applications for teaching Mathematics in special education classrooms. At first, the researcher asked the special education teachers about their age, their educational level, their years of educational experience with students with special educational needs and the type of their current school. The questions in the semi-structured interview were as follows:

1. In which competence level do you evaluate your utilization of educational technology applications in your Mathematics classroom? Are you confident about your digital skills?
2. Which are the most common technology applications that you integrate in teaching Mathematics?

3. What challenges or difficulties have you encountered when integrating educational technology applications in your Mathematics classroom?
4. What was your purpose for utilizing educational technology applications?
5. What are the features and concepts in which using educational technology applications is more effective in math classrooms?
6. What recommendations do you have for a more effective utilization of educational technology applications in teaching Mathematics in special education?

Data Collection and Analysis Procedure

Each interview lasted approximately 40 to 60 minutes and it was conducted face-to-face via teleconference software (Skype) after the researcher had set an appointment with each participant. The interviews were completed during the period of January and February 2022. The researcher recorded and transcribed all fifteen interviews and then, proceeded with content analysis and coding the transcriptions based on comparative techniques to find common themes and sub-themes. The researcher expressed also the number of the special education teachers who gave the answers agreeing with the constituted themes. The suitability and intelligibility of the questions included in the semi-structured interview form were resulted by the opinions of 3 experts in the field of special education, consisting of math teachers working as special education teachers for more than fifteen years. The supervisory team of experts reviewed the open-ended questions pertaining their language, wording and relevance to the aim of the study. Following the initial experts' reviews, the researcher conducted a pilot study with two math teachers working in special education schools; one from primary education and the other from secondary education, who did not participate in the main study. The reviews and the pilot study did not provide any major improvements or modifications, but the researcher was facilitated in practicing the conversation flow, and also one question was modified due to its initial leading character.

Results

Perceptions of special education teachers on their level of competence

As it shows in Table 2, special education teachers think that they are competent enough with developed digital skills to integrate educational technology applications in math classrooms (n=11). Only 4 teachers reported incapable of utilizing various technology applications in their educational interventions with students with special educational needs.

Table 2. Perceptions of special education teachers on their level of competence

Perceptions	Participants (n)
I am confident in my competence to use educational technology applications in teaching Mathematics	11
I am not confident in my competence to use educational technology applications in teaching Mathematics	4

Perceptions of special education teachers on most common educational technology applications in teaching Mathematics

The following Table 3 shows that the teachers who participated in this qualitative study reported various technology tools, resources, and educational technology applications which can and are being used in math classrooms in special education schools. The results showed that most teachers stated that educational digital games (n=12) are frequently used in enabling math skills between students with special educational needs. Teachers also indicated that drill-and-practice websites (n=9) are a common educational tool for Mathematics. Mobile apps (n=7), interactive smart whiteboards (n=4), projection devices (n=5) and digital calculators (n=10) are among the other educational technology applications stated by special educational teachers.

Table 3. Most common educational technology applications in teaching Mathematics

Educational technology applications	Participants (n)
Educational digital games	12
Drill-and-practice websites	9
Mobile apps	7
Interactive smart whiteboards	4
Projection devices	5
Digital calculators	10

Perceptions of special education teachers on the challenges with using educational technology applications in teaching Mathematics

The following Table 4 shows that the teachers who participated in the current empirical study described five main and critical implications that they encountered when integrating educational technology applications in math classrooms in special educations schools. As the following results show, teachers indicated five different problems when introducing and dealing with the aforementioned technology applications in teaching Mathematics. Almost half of the participants (n=8) reported that there are significant possibilities of students' learning performances' deterioration and also, they observed difficulties in keeping track of students' performance and mistakes. Six of the special education teachers reported that they faced challenges in supporting maintenance, and resolving various technical issues of the applications and the devices. A total number of four participants indicated that students' involvement with the educational technology applications obtained fragmented, rather than complete results. Furthermore, disconnections or no connection to the internet were reported by some special education teachers (n=4) in this study.

Table 4. Perceptions of special education teachers on the challenges with integrating educational technology applications

Perceptions	Participants (n)
Possibility of students' deterioration	8
Insufficient or incomplete feedback about students' performance	8
Challenges with adjusting to setup and maintenance demands	6
Disconnections in the internet – No internet connections	4
Achievement of fragmented results	4

Perceptions of special education teachers on their purpose for utilizing educational technology applications

As it shows in Table 5, all special education teachers (n=15) think that the integrated educational technology applications enable teachers to support students with special educational needs and give them the chance for a more independent math work and learning course. Also, many participants (n=12) observed that students find Mathematics more engaging and less intimidating and feel less anxious and more confident in engaging in math problems solving. Seven special education teachers reported that the technology applications serve as a unique report of students' strengths, needs and learning results and a few (n=3) stated that some educational digital games are more efficient than typical homework formats to track students' performance in tasks and activities.

Table 5. Perceptions of special education teachers on their purpose for utilizing educational technology applications

Perceptions	Participants (n)
Enhancing students' independent practice and course of learning	15
Making students more motivated and engaged to educational process	12
Enabling a more effective assessment	7
Possibility of tracking students' learning performance	3

Perceptions of special education teachers on mathematical concepts and features in *which using educational technology applications are more effective*

As it shows in Table 6, the participants of the present study provided five different perceptions of key mathematical concepts and features that are taught more effectively through educational technology applications. All special education teachers (n=15) respond that students practice and have the chance to enhance their skills in identifying and using numbers and their counting skills. Also, fourteen teachers indicate that mathematical problem solving skills can be introduced and taught more effectively by utilizing various applications. According to special education teachers, basic calculations (n=13), and geometrical shapes (n=10) are easily visualized in the educational technology applications, so students with special educational needs experience more simplified steps for completing simple, or more complex, calculations and practicing in geometry.

Table 6. Mathematical concepts and features in which using educational technology applications are more effective

Perceptions	Participants (n)
Counting	15
Numbers	15
Problem solving	14
Basic Calculations	13
Geometrical shapes	10

Perceptions of special education teachers on the recommendations for an effective utilization of educational technology applications in teaching Mathematics

The following Table 7 shows that the teachers who participated in the current empirical study provided four different categories of recommendations for enhancing technology applications' effectiveness in math classrooms for children with special educational needs. Most participants (n=12) recommended the development of in-service training programs for teachers on using technology in classrooms. In addition, five special education teachers suggested a quicker and more easy process to set up the technology applications in order to help students organize their time. Another five participants recommended that designers should give them the ability to adjust the difficulty level in order to develop personalized kai differentiated math work for individual teachers. Two participants did not indicate any recommendations, stating that they only use technology applications as a reinforcement for students' engagement.

Table 7. Recommendations for an effective utilization of educational technology applications in teaching Mathematics

Perceptions	Participants (n)
In-service training for teachers on using technology applications	12
Enabling a quick and more easy set up for classroom use	5
Allow teachers to adjust the difficulty level	5
I cannot make a recommendation	2

Discussion

Students with special educational needs need to have sufficient mathematical knowledge and developed mathematical skills to maintain their independence in everyday life. At this point, the role of teachers in special education becomes more important, as they are the ones who provide guidance and support to their students for the development of academic and social skills. Of course, the decisive guidance of teachers should coexist with the effectiveness of the use of technological applications in the teaching of students with special educational needs, as evidenced in the relevant literature. Therefore, the present research study aimed to determine the perceptions and attitudes of special education teachers on the utilization of educational technology applications in teaching mathematics. Fifteen teachers currently working in primary and secondary special education schools in Greece participated in the study and their answers are being presented and analyzed in order to draw specific conclusions concerning the aim of this research.

According to the findings of the present study, special education teachers report that they use a wide range and variety of educational applications, such as digital applications, the Internet, digital games, projectors, and interactive whiteboards. The effectiveness of the use of most of these technological tools is supported by data from the existing literature. In particular, the role of computers and other technological tools (e.g. smart mobile devices, interactive whiteboards) is particularly emphasized in terms of enhancing learning motivation, but also in achieving learning goals (Baglama et al., 2017; Wen et al., 2020; Wiest, 2001).

In addition, previous research has examined the perceptions of teachers, especially those employed in primary education, regarding their ability to introduce the use of technological applications in teaching practice. The findings of the studies show that teachers understand the need for training to enhance their digital skills, despite teachers' beliefs about the possibility of integrating technology into the learning process (Baglama et al., 2017; Demir & Bozkurt, 2011; Wen et al., 2020). The above findings seem to be consistent with the present results. Teachers also believe that there are several challenges and various obstacles that need to be addressed to improve the process of integrating educational technology applications into the classroom (Pierce & Ball, 2009). This is similar to the results of the present study in which special education teachers report that the use of technology helps on the one hand in teaching various mathematical concepts and skills. On the other hand, the possibility of students' engagement and difficulties deteriorating, the incomplete feedback about students' performance, the fragmented results, the disconnections in the internet, and the challenges with setting up and technically maintaining the technology tools are specific problems in integrating educational technology applications.

In general, the present study showed that special education teachers consider that they can satisfactorily use technological applications in the teaching of mathematics. The study also provides important educational conclusions regarding the importance of integrating applications into special education classrooms and the development of mathematical skills in students with special educational needs. Teachers must follow new trends and practices to fully meet the needs and difficulties of their students. Hence these general conclusions, it is proposed that in-service training programs and courses should be designed for teachers to enhance their competency and skills in using technology into classrooms. Also, it seems important to overview and study teachers' perceptions on the integration of technology in addressing other academic and learning difficulties, such as in reading and writing skills. Educational policy should improve teachers' opportunities to develop their knowledge, understanding and attitudes towards the importance of using educational technology applications in teaching Mathematics.

One of study's main limitations regards the analyzed themes and sub-themes of the content analysis, and the nature of open-ended questions. Certain educational technology applications or mathematical concepts and features were absent from participants' answers.

In this case, a quantitative research with a close-ended questionnaire could provide an inter-dimensional analysis of data. In addition, a quantitative correlation analysis of teachers' perceptions and their characteristics could be useful for making specific recommendations for future practices in implementing technology in mathematical special education. As with qualitative studies similar to the present study, the findings cannot be used to generalize the patterns and perceptions of the entire population of special education teachers, but can be used more to provide insight into the current situation and to strengthen the planning of possible future research redirects. Similar studies with a quantitative or experimental methodological approach may be carried out in the future for more generalized conclusions.

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Développer les compétences à l'écrit: un défi dans la formation des futurs enseignants du français langue étrangère en Grèce.

Varsamidou Athina
EDIP Université Aristote de Thessalonique
avarsamidou@frl.auth.gr

Sakellari Natalia
Enseignante FLE, Education Nationale/Université Aristote de Thessalonique
nsakellari@hotmail.com

Résumé

L'acte d'écrire s'avère être un élément fondamental de l'apprentissage d'une langue étrangère. La compétence à l'écrit constitue un des objectifs de l'enseignement-apprentissage du Français Langue étrangère (FLE), ainsi qu'une des compétences à développer chez les apprenants. Tenant compte de ce fait, la bonne maîtrise du système de la langue écrite par les enseignants de FLE est d'une importance majeure. La formation initiale des futurs enseignants de FLE devra contribuer à leur préparation adéquate afin qu'ils puissent faire face aux défis et aux besoins créés par leur public. Dans le présent article, nous présenterons une recherche qualitative menée auprès des étudiants-futurs enseignants de FLE du Département de Langue et de Littérature Françaises à l'Université Aristote de Thessalonique. Les résultats de la recherche ont mis le point sur la nécessité de revisiter la place de l'écrit dans formation initiale des enseignants de FLE.

Mots clés : formation initiale, enseignement du FLE, production et interaction écrites

Introduction

Le monde d'aujourd'hui se caractérise par un changement continu dans tous les domaines. Le développement de la technologie et de la communication a beaucoup influencé notre quotidien et par conséquent, le monde de l'éducation aussi. Il faut ajouter à tout cela le besoin d'amélioration de la qualité de l'enseignement-apprentissage afin que les jeunes deviennent plus compétitifs sur le marché du travail (European Commission, 2000). Dans ce contexte, il est indispensable que le processus de l'enseignement-apprentissage s'adapte aux nouvelles conditions sociales et que les futurs enseignants reçoivent une formation initiale qui leur permettra de suivre le rythme du changement (Lefrançois, 2013).

L'enseignant joue un rôle crucial dans l'éducation des jeunes et sa propre formation initiale est d'une importance majeure. Selon Paquay (2005), l'enseignant doit en permanence s'adapter à des nouveaux besoins et enrichir ses compétences afin d'y répondre. Ces dernières années, dans les pays occidentaux l'enseignant a acquis un statut « professionnel » dans le sens où il a dû être en mesure d'enseigner de façon autonome en toute circonstance (Paquay, Altet, Charlier, Perrenoud, 2001)

Concernant l'enseignant du français langue étrangère (FLE), il doit posséder diverses compétences, dont certaines mentionnées et schématisées par Trottet (2011) qui s'inspire des travaux de Perrenoud et de l'équipe du *CARAP* (2012). Ces compétences sont les suivantes :
- ✓ Compétence à communiquer et à s'adapter : compétence de négociation et de médiation, compétence à gérer la diversité culturelle et linguistique ;
- ✓ Compétence à se positionner comme acteur de changement institutionnel : compétence à faire évoluer l'institution, compétence à collaborer, compétence à adopter une posture de praticien chercheur ;

✓ Compétence à enseigner (les langues et les cultures) : compétence à organiser et à mettre en œuvre des unités d'enseignement/apprentissage, compétence à gérer les relations avec les apprenants ;

✓ Compétence à se (trans)former : compétence à adopter une démarche de praticien réflexif, compétence à s'auto-former (Trottet, 2011 : 40).

En ce qui concerne l'écrit (production écrite, interaction écrite et médiation écrite) qui fait l'objet de la présente étude, la formation initiale des futurs enseignants du FLE doit viser au développement de la compétence linguistique, puisqu'ils vont devenir le modèle linguistique de leurs apprenants. De plus, pendant leur formation, les futurs enseignants doivent avoir la possibilité de développer leurs compétences culturelle, interculturelle et pluriculturelle, indissociables aujourd'hui de l'enseignement des langues étrangères.

La place de l'écrit (production écrite, interaction écrite et médiation écrite) dans la formation des futurs enseignants à l'Université en Grèce

Les études au Département de Langue et de Littérature Françaises à l'Université en Grèce se déroulent sur 4 ans. À l'Université Aristote de Thessalonique, le cours du discours écrit est dispensé pendant les 2 premières années d'études, soit les 4 premiers semestres. Il s'agit d'un cours obligatoire pour obtenir le diplôme de fin d'étude, proposé par le Secteur de la Linguistique Appliquée et de la Didactique. Le cours est dispensé à raison de 8h par semaine au cours des deux semestres de la première année d'étude et à raison de 6h par semaine au cours des deux semestres de la deuxième année.

Pour le cours du discours écrit de la première année qui fait l'objet de la présente étude, le contenu repose sur des exercices et des activités de production et de compréhension écrite, ainsi que d'interaction et de médiation écrite dans le but de mener les étudiants à atteindre le niveau B2 du *Cadre Européen Commun de Référence pour les langues* (CECR, 2001). Plus précisément, grâce au matériel proposé et travaillé en classe, les étudiants à la fin du cours devront être en mesure : a) de comprendre des notions et des informations assez complexes à partir des documents écrits, b) de produire des textes écrits cohérents traitant des sujets issus de thématiques variées, c) d'argumenter de façon efficace à l'écrit, d) d'interagir à l'écrit sur des sujets qui les concernent, e) de développer des stratégies afin d'atteindre le but communicatif d'un ou plusieurs textes écrits. (https://qa.auth.gr/el/class/1/600157947/M1)

Avant d'aborder le sujet principal de notre étude, il nous semble nécessaire de citer les descripteurs du CECR (2018) pour les compétences mentionnées (production-interaction-médiation écrites-Niveau B2) :

- **Production écrite :** L'apprenant peut écrire des textes clairs et détaillés sur une gamme étendue de sujets relatifs à son domaine d'intérêt en faisant la synthèse et l'évaluation d'informations et d'arguments empruntés à des sources diverses.

- **Interaction écrite et interaction en ligne :** L'apprenant peut relater des informations et exprimer des points de vue par écrit et s'adapter à ceux des autres.

- **Médiation écrite :** L'apprenant peut transmettre l'essentiel du contenu de textes bien structurés mais longs et complexes quant au fond, liés à ses centres d'intérêt professionnel, éducationnel et personnel, et clarifier les opinions et les intentions des locuteurs.

Hypothèses de travail

Les hypothèses de travail de la présente étude se présentent comme suit :

- *Les étudiants de la première année d'études commettent des erreurs qui relèvent de la non-appropriation du système de la langue française ;*

- *Les étudiants de la première année d'études commettent plus d'erreurs à la médiation écrite qu'à la production écrite et à l'interaction écrite.*

Pour valider ces hypothèses nous avons mené une étude et nous avons analysé les productions des étudiants de la première année d'étude du Département de Langue et de Littérature Françaises de Thessalonique.

Le profil des étudiants

Notre étude se porte sur une cinquantaine d'étudiants divisés en deux groupes de 25 personnes ayant réussi aux examens nationaux de fin d'étude secondaires et inscrits au Département de Langue et de Littérature Françaises de l'Université Aristote de Thessalonique pendant l'année académique 2020-21. Parmi eux, 3 sur 50 (soit 6%) avaient un niveau C2 en français, 5 sur 50 (soit 10%) avaient un niveau C1 et 9 sur 50 (soit 18%) avaient un niveau B2. La majorité écrasante (33/50, soit 66%) avait un niveau inférieur au B2 (niveau intermédiaire entre A2-B1). Il est à mentionner que le nombre de filles (38/50) était beaucoup plus élevé que celui des garçons (12/50). D'après les entretiens oraux lors de nos premières rencontres et un contrôle de placement que nous avons effectué au début du semestre, nous avons constaté une importante hétérogénéité et une grande disparité de niveau et de besoins et par conséquent, nous devions les prendre en considération pour la préparation de notre cours. Nous avons observé et analysé les productions écrites de notre groupe (focus groupe) pendant deux semestres académiques consécutifs (du 14 octobre 2020 au 28 janvier 2021 et du 03 mars au 20 juin 2021).

Outils méthodologiques

Notre étude cherche à définir le degré de développement des compétences à l'écrit des étudiants concernés par l'observation de leurs productions et par l'analyse de leur contenu (au niveau de la grammaire, du vocabulaire et de la syntaxe), par conséquent il s'agit d'une approche qualitative. Nous avons mené cette étude pour interpréter les résultats de notre groupe aux épreuves réalisées et tirer des conclusions pertinentes dans un double but : d'une part, pour améliorer notre style d'enseignement en faisant des modifications ou des ajouts et de l'autre pour aider davantage la majorité à atteindre le niveau demandé. Amener ceux dont le niveau était inférieur au B2 à acquérir de la confiance en eux et à soigner leur style à l'écrit a été notre première ambition. Comme nous l'avons déjà mentionné, notre étude se porte sur trois axes : la production écrite, l'interaction écrite (et en ligne) et la médiation écrite. Nous avons recueilli des copies individuelles et nous avons réfléchi profondément sur les faiblesses constatées pour aboutir à des remarques générales par rapport à la fréquence ou au type d'erreurs commises (maladresses langagières, choix et maîtrise du vocabulaire, morphosyntaxe, ton et registre adapté etc.).

Type d'activités données aux étudiants et thématiques abordées

Dans le but de mener nos étudiants à atteindre le niveau B2 et développer les compétences mentionnées, nous avons opté pour des activités claires et bien structurées, d'une part en nous appuyant sur les principes du CECR et de l'autre, en tenant compte des contraintes de l'enseignement à distance imposé lors de l'année académique 2020-21 à cause de nouveaux protocoles sanitaires en raison de la pandémie. La plateforme électronique de l'Université Aristote de Thessalonique nous a assuré la possibilité d'y intégrer des activités interactives et d'engager, en même temps, les étudiants dans une implication active au cours. La durée prévue du cours (8h par semaine pour la première année d'études) rend le travail de l'enseignant plus exigeant vu qu'il doit à tout moment susciter l'intérêt de son groupe, le mobiliser et rendre la séance créative, rythmée et dynamique. Notre intention a été d'offrir un cours avec un rythme varié, en adoptant des stratégies qui renforcent l'interaction et le partage et qui favorisent l'esprit collectif. Il est à noter que nous avons utilisé les nouvelles technologies, les outils numériques, ainsi que les possibilités de la plateforme électronique (activer le forum, créer des quiz ou des jeux en ligne, diviser en groupes) pour retenir l'intérêt

de notre classe et rendre notre cours plus motivant. Des textes authentiques (informatifs ou argumentatifs) tirés des sites ou de la presse nous ont servi de support, et ils ont permis à nos étudiants d'enrichir leur vocabulaire, de réviser la grammaire et de développer leur expression écrite. L'ensemble de ces textes déclencheurs et toutes les ressources proposées ont été très importants pour mettre en œuvre des stratégies de passage de la perception (compréhension) écrite à la production écrite.

Pour la production écrite, nous avons mis les étudiants en situation de produire des textes liés à la réalité (exprimer leur point de vue, expliquer pourquoi, argumenter, prendre position, écrire une critique d'un film, d'un livre ou d'une pièce de théâtre ou encore synthétiser des informations issues de sources diverses, justifier, illustrer par des exemples). Pour l'interaction écrite et l'interaction en ligne, notre but a été de donner la possibilité à notre groupe a) d'écrire des lettres ou des courriels formels d'invitation, de remerciements ou d'excuse en utilisant le registre de langue et les conventions appropriés, d'écrire des lettres professionnelles qui sortent de l'ordinaire, en utilisant des structures et des conventions appropriées, de prendre des messages personnels et professionnels complexes et en laisser et b) de participer activement à une discussion en ligne, de donner son point de vue et répondre à des opinions sur des sujets qui présentent de l'intérêt. Finalement, pour la médiation écrite, nous avons proposé un éventail d'activités afin que les étudiants soient capables de transmettre des informations spécifiques, de présenter des données (des graphiques, des diagrammes, des tableaux, des cartes mentales) et les expliquer.

Une thématique assez variée a été proposée afin de mettre en pratique les stratégies du développement des compétences à l'écrit : des biographies des personnes célèbres, la pyramide alimentaire, le sport, le recyclage et l'écologie, le rôle du numérique à l'enseignement, le chômage, le temps libre et les loisirs, le cinéma français, les achats en ligne et la consommation, la correspondance officielle et amicale, la mode, le langage des jeunes, l'apprentissage des langues etc. Les étudiants ont été incités à suivre régulièrement la presse et l'actualité afin de les commenter, de préparer leurs exposés et de faire de brefs rapports écrits. Il est très important pour la production écrite d'avoir une culture générale, de s'informer sur l'actualité et de connaître le monde qui nous entoure.

Critères d'évaluation

Il est très important de souligner qu'au début du semestre, nous avons défini des critères d'évaluation pour la production écrite. Ces critères ont été présentés aux étudiants avant chaque épreuve afin qu'ils aient une vision globale de la procédure à suivre et de leur évaluation. Pour définir les critères d'évaluation de la présente étude nous avons puisé des éléments dans les descriptifs CECR (2001; 2018 ; 2020) et CARAP (2012), dans les critères d'évaluation du Certificat de connaissance en langue française de l'état grec (KPG), ainsi que dans les travaux des chercheurs sur l'analyse de l'erreur (Astolfi, 1997; Demirtaş & Gümüş, 2008; Tagliante, 2001). Les axes principaux de l'évaluation de la présente étude se présentent ainsi :

Il nous semble primordial de dire que nous avons opté pour une évaluation finale plutôt positive, en tenant compte du degré de participation et d'implication des étudiants aux cours et de leur volonté de collaborer, de partager et de contribuer de façon créative et active. Avant chaque épreuve, les critères cités ont été l'objet d'une brève discussion dans le but d'élucider les problèmes et de répondre à des questions éventuelles. Nous avons voulu créer une ambiance amicale et sécurisante et cultiver l'esprit collaboratif sans que les étudiants soient stressés pour avoir subi des examens. Notre intention était d'observer et d'analyser des textes écrits spontanés, produits dans des conditions de détente.

Tableau 1. Les critères d'évaluation pour le discours écrit

CRITÈRES D'ÉVALUATION
-Registre de langue
-Structure adéquate
-Vocabulaire-Orthographe
-Choix langagiers
-Morphosyntaxe
-Cohérence & Cohésion

Analyse des critères

Les critères sont des éléments de référence qui permettent de mieux juger et évaluer les compétences visées. Il est important, avant d'aborder les résultats observés, de procéder à l'analyse de critères sélectionnés présentés dans le tableau ci-dessus pour évaluer l'ensemble de compétences dans le discours écrit.

Registre de langue

Ce critère examine à quel point l'étudiant utilise à ses productions écrites le bon registre de langue ainsi que le ton adapté à la situation de communication indiquée par la consigne. L'étudiant devra être en mesure d'utiliser a) le style adapté afin de produire un texte formel ou informel, un rapport, un article, un résumé, etc., et b) les mots et expressions adéquats en fonction de la personne à laquelle il s'adresse, son destinataire. Pour ce faire, il devra être capable de répondre à des questions comme : À qui je m'adresse ? Quel registre de langue dois-je utiliser pour le type de texte demandé par la consigne ?

Structure adéquate

Ce critère examine à quel point l'étudiant est capable de produire des phrases ayant une bonne structure intérieure et adaptées aux différents actes de paroles qui peuvent être sollicités par les consignes. Il doit être en mesure de bien s'exprimer afin de pouvoir argumenter, communiquer des informations, raconter, justifier, accepter, refuser, protester, se plaindre, exprimer son mécontentement, etc.

Vocabulaire-Orthographe

Le critère en question examine la compétence lexicale et l'orthographe lexicale qui se réfèrent à l'étendue et à la maîtrise du vocabulaire. Plus précisément, il sert à démontrer d'un côté, si l'étudiant peut utiliser une gamme variée de vocabulaire, correspondant à son niveau (niveau B du CECR), et de l'autre côté, sa capacité à utiliser le vocabulaire approprié pour la situation de communication désignée par la consigne.

Choix langagiers

Ce critère vise à examiner à quel point l'étudiant est capable de faire une bonne sélection d'éléments à l'intérieur de la phrase afin de produire des structures plus élaborées et plus complexes adaptées au niveau et au contexte demandés. Plus précisément, il sert à démontrer si l'étudiant, dans ses productions écrites, peut éviter les répétitions des mêmes tournures, s'il utilise des synonymes ou des antonymes pour varier et enrichir ses énoncés et s'il est capable de mettre en relief, un procédé qui permet de dissiper la monotonie du discours.

Morphosyntaxe

Il s'agit d'un critère qui sert à évaluer la compétence morphosyntaxique des étudiants selon le niveau demandé. En d'autres termes, par ce critère, nous visons à tirer des informations pertinentes concernant d'une part, le bon choix des formes grammaticales

(conjugaisons des verbes, formation du féminin et des adverbes, emploi des modes, des voix et des pronoms, accord du participe, récit dans le passé ou le futur…) et de l'autre, le degré de l'organisation adéquate d'un groupe de mots dans une phrase (syntagme nominal, verbal, prépositionnel, adverbial…).

Cohérence et Cohésion
Par ce dernier critère, l'évaluation porte sur l'ensemble de la production écrite : la fluidité et l'aisance du discours, la mise en page, la ponctuation, l'emploi des marqueurs logiques qui facilitent la compréhension et rendent le texte plus clair et mieux structuré, les idées qui s'enchaînent de façon précise, l'organisation finale du texte sont les éléments en question. L'étudiant doit être capable de choisir des mots de liaison, des formules d'introduction ou finales, d'oser prendre des risques tout en respectant la consigne, et d'éviter les phrases trop longues qui empêchent la compréhension.

Résultats observés
Après avoir effectué l'étude des productions des étudiants en s'appuyant sur les critères d'évaluation, nous avons constaté qu'elles présentent les caractéristiques suivantes:

Registre de langue
- Absence de formule d'appel du destinataire aux lettres et/ou courriels
- Choix inapproprié de formule d'appel aux lettres et/ou courriels formels : « Cher copain », « Mon ami/Mon amie », tutoiement
- Choix inapproprié de formule d'appel aux lettres amicale/ courriels : vouvoiement (« Répondez-moi vite »)
- Absence de titre aux articles
- Ajout de formules d'appel dans les articles : « Chers amis », « Bonjour les lecteurs »

Structure
- Structure de phrase inappropriée
    - Proposer : « Est-ce que voudrais-tu aller y ensemble ? », « C'est un très bien histoire et c'est ça je te propose pour venir avec moi », « Si tu as interessé aller et partager avec moi »
    - Refuser : « Désolé, je crois de ne peux pas venir », « Malheureusement, nous ne pouvons pas de aller ensemble »
    - Inviter : « Je vous invite de »…. au lieu de « je vous invite à »
    - Exprimer l'opinion : « De mon avis » au lieu de « À mon avis »
    - Exprimer l'obligation : « Celui-ci faut répondre » au lieu de « il doit répondre ».

Choix et maîtrise du vocabulaire-Orthographe.
- Problèmes d'orthographe : « l'entré », « conaisance », « pay », « ensamble », « capapilités », « millieux », « loisiris », « dangeurs », « dévelloper », « example », « l'auter »
- Problèmes d'accentuation : « probleme », « présénte », « exterieur », « libré », « Gréce », « repetition », « considere », « éxplique », « etat », « serie », « ideal », « trés »
- Des noms dérivés souvent mal formés : « refuser » – « refusation » (le refus), « échouer » – « écheu » (l'échec), « soumettre » – « soummis » (la soumission)

Choix langagiers
- Confusions lexicales : « préoccuper – occuper », « rencontrer – raconter », « nombre – chiffre »
- Utilisation des mots qui viennent de l'anglais : « city » au lieu de « ville », « travel » au lieu de « travailler », « expresser » au lieu de « exprimer », « exercise » au lieu de «

exercice », « consumer » au lieu de « consommer », « vegetables » au lieu de « légumes »

➢ Utilisation des mots courants et manque de formules impersonnelles dans des textes recherchés (p.ex dans des lettres officielles) :
« Je veux savoir » ou lieu d'une formule de politesse (présent – conditionnel présent), « il faut » au lieu de « il faudrait »

Morphosyntaxe
➢ Utilisation inappropriée de la forme verbale : « il aurais », « à s'intégré », « on peut prend », « l'écrivain italien écrire », « tu voudra », « tu reste », « j'avoir », « elle promouvoit », « l'exposition a organisé par », « on veut organise », « plus de personnes avec qui parlé »
➢ Absence d'accord ou accord inapproprié du participe passé : « a écri », « nous avons lit », « j'ai écoute », « elles ont suivé », « ils ont devu », « nous avons participer », « elles sont allés », « nous sommes vécu », « ils sont situé »
➢ Accord inapproprié entre le nom et l'adjectif : « vie personnel », « les aspects positives », « gens différentes », « informations intéressants », « livre intéressante », « l'esprit sportive », « entrée gratuit », « grande succès »

Ensemble de la production écrite/ cohésion et cohérence
➢ Absence ou utilisation limitée des connecteurs
➢ Absence de mise en page correcte
➢ Mauvaise utilisation des points de ponctuation

Après avoir effectué l'étude des productions des étudiants, en outre nous avons constaté que les productions de médiation écrite présentent souvent certaines caractéristiques en plus de celles mentionnées ci-dessus. Plus concrètement :
➢ Interférences de la langue maternelle et/ou d'autres langues parlées : « Megaro de Musique », « à Alpis », « entrance », « relacion », « interest », « socializzazione », « exercises »
➢ Traduction littérale du grec : « c'est très bon d'être un lecteur », « elle présente la relation de la connaissance humaine avec le monde », « il aura lieu la présentation du livre », « Que vienne ! », « il a fait la vie de nombreux personnes meilleure », « aller à l'espace de son travail », « apprendre des informations », « écrire les positifs et négatifs de cette pratique »

Discussion

Les résultats de la présente étude valident nos hypothèses de travail. D'une part, ils montrent que les étudiants-futurs enseignants de FLE commettent des fautes tant au niveau de la maîtrise du système de la langue française qu'au niveau du genre textuel qu'ils doivent rédiger, ce qui valide notre première hypothèse. D'autre part, concernant les productions de médiation écrite des étudiants, elles présentent effectivement en plus des fautes citées précédemment, des interférences d'autres langues, ainsi que des traductions littérales depuis leur langue maternelle, ce qui valide notre seconde hypothèse.

On peut se demander quelles compétences devraient avoir les futurs enseignants de FLE en Grèce pour faire face aux nouveaux défis dans le domaine de l'enseignement-apprentissage des langues étrangères. L'écrit joue un rôle primordial. Par conséquent, le travail constant des étudiants afin qu'ils puissent s'approprier le système de la langue au plus haut niveau et qu'ils l'enseignent à leur tour est obligatoire.

La place de la médiation écrite dans le cursus universitaire pourrait être réévaluée. En effet, d'une part, la maîtrise de cette compétence pourrait constituer un atout pour faire face aux défis créés par un monde de plus en plus plurilingue et pluriculturel. D'autre part, les activités

de médiation écrite pourraient permettre de travailler sur un plus grand nombre de lacunes des étudiants en les révélant.

Conclusion

L'enseignant joue un rôle important dans l'éducation. Ses compétences influencent directement la qualité de l'enseignement-apprentissage. La formation initiale des futurs enseignants de FLE doit leur donner la possibilité de s'entraîner et de travailler constamment la langue à l'écrit. Venir en contact avec tous les genres de discours écrit (des textes narratifs, argumentatifs, descriptifs) et travailler l'écrit à un rythme intensif afin de développer toutes les compétences à l'écrit (production, interaction, médiation) est indispensable. Cela pourrait contribuer à l'amélioration de l'expression et à l'acquisition d'un discours fluide, structuré et compréhensible. Un choix ciblé d'activités et de ressources autour du développement des compétences langagières des futurs enseignants pourrait leur assurer d'écrire de façon plus concrète, de nuancer leur discours et finalement de progresser à l'écrit. Cet éventail d'activités sur des thématiques intéressantes serait un outil précieux dans le but d'apprendre à organiser leurs pensées et à renforcer leur expression écrite. Il n'y a aucun doute que le discours écrit est contraignant et présente des troubles et des difficultés, pourtant si les futurs enseignants, pendant leur démarche universitaire, s'entraînent régulièrement et sérieusement à sa maitrise, leur perfectionnement lexical, grammatical, syntaxique et pragmatique sera assuré. Pour conclure, un enseignant de langue doit être en mesure de transférer en langue étrangère des messages de sa propre langue et pour ce faire il doit maîtriser la langue tant au niveau linguistique que culturel.

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