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ITALIAN AND TURKISH UNIVERSITY STUDENTS' VISUAL LITERACY SKILLS: A COMPARATIVE RESEARCH STUDY*

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Abstract

In recent years, a new life style has been started via internet and social media. Communication among distant individuals become popular and trendy thanks to the internet. Internet has become a vital tool of communication which is mostly carried out by the visuals like images, icons, pictures, etc. These figurative styles lead to a kind of visual communication which needs understanding the meanings and usage of the visuals. To understand the meaning of the visuals and to interpret them correctly one has to have a good level of visual literacy skill. Hereby, the main goal of this study is to determine the visual literacy skill level of Italian university students and the visual literacy skill level of Turkish university students. It is predicted that a comparative study conducted in Italy can contribute to the follow-up system of European structures. It is expected that the outputs of the study will contribute beyond the visual literacy content of the two countries, Türkiye and Italy. The visual literacy scores of Italian and Turkish students are supposed to be at a good level. In the research, the visual literacy scores of Italian and Turkish students did not display any meaning by gender. The findings show that visual literacy scores differ by the students' country of residence. The interaction of country of residence and reproduction did not have any effect on visual literacy. When Italian students evaluated their visual literacy scores up to their grade level, the results of the analysis showed that the visual literacy scores of the second-grade students were higher than the first and third grade students. On the other hand, Turkish students did not show any meaningful difference according to their classroom perception. The t-test results of the Italian students' visual literacy scores according to the departments they studied did not display any difference, too.

Keywords: Visual literacy, Italy, Türkiye, scale adaptation, mix method.

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1. Introduction

1.1. Introduction the problem

During the recent years, the internet and social media are used common and much more often than before. This can be considered a new way of life. People can communicate with each other faster than before because of internet. It can be said that the world has turned upside down via internet and visuals with it. So it is crucial to understand the meaning of visuals. According to Prensky (2001), college graduates spare less than 5000 hours for reading in their spare time. Besides, the youth spend 10,000 hours by playing video games. On the other hand, they watch TV approximately 20,000 hours. It can be understood easily by the data that especially young people are getting used to spending their time with technological devices. But unfortunately, the people spending their time by reading and playing video games and also watching TV are less than the first group. Prensky (2001) named them as "Digital Natives". Because he considers young people nowadays are all "native speakers" of digital language and all technological things. They aren't the digital immigrants. They can easily understand technological innovations. However, what about visual literacy?

Visual literacy was first introduced by John Debes in the 1960s. Debes's (http://fod.msu.edu/oir/visual-literacy) visual literacy is defined as "developing the visual competencies of a group and integrating what one sees with other sensory experiences". According to the researcher; visual literacy has been defined as the ability to make sense of the messages given with visuals and produce new messages with them. Italian semioticist Umberto Eco has earned a title for himself with his studies on semiotics (Citation from Rıfat 1992: Çağlar 2012). He has used the views of Saussure and Peirce in his work known as Semiotics Theory. According to Umberto Eco, semiotics is the evaluation and analysis of cultural facts considered as a communication process. According to Eco; an indicator is a device that can significantly replace something different. In this respect, it has placed a broader meaning on the concept of indicator. While Saussure explains the semiotics theory, he emphasizes that language expresses concepts with signs. Therefore, it is possible to make comparisons with the sacred ceremonies such as the communication among the soldiers, the deaf-mute alphabet and the like. Of course, language is the most important figure in these systems. This suggests that science can be designed to examine the life of the indicators in society. Saussure called this science as semiotics. Semiotics describe the core traits of the indicators and the law they relate to (Kıran and Kıran 2012: 318-319). Pezzini (2011) discusses the museum established by Orhan Pamuk in Çukurcuma in İstanbul which he had been organized for the novel called the *Museum of Innocence*. This is a good example of how a story is strongly combined with visuals.

European Union population is examined from the point of "using skills", "critical comprehension" and "communication skills". In this way, variety of data has been gathered and suggestions have been presented. In a short time, EU made a significant progress on media literacy in regarding to organization of the field as well as its study fields.(Gül 2014). Starting from primary school to secondary and high schools, students are close to learning technological developments. For university students it is also very important to improve themselves in any fields. Therefore improvement of visual literacy skills is needed in nowadays tecnological

world. Learning school of thought of different societies, noticing the gaps, raising awareness about differences and similarities among the cultures will make a greaty contribution to the countries educational development. Visual literacy skills can be improved by organizing various activities for the class duration. Plus, the active participation of the students to these classes will improve their visual literacy skills level as a personal development which they will need right after the graduation in their professional life. Lee (2010) aimed to identify the differences in students' knowledge and studies in art classes. According to the results of the research; the students stated that they felt that they were unique in painting. In addition, the development of visual literacy skills was observed during the research. On the other side, Shurtleff (2008); continued his own research in his class in a 6-month-period between November 2003 and May 2004. Within this research, reading texts were processed together with activities prepared with story map and videos. Thus, it was thought that students' interests in reading might increase. Three (3) students with low success level were selected for the case study. Their reactions to fictional texts and poems in English lessons taught with story maps and videos were observed and evaluated.

Research questions of the study was formulated as follows;

1. Is there any meaningful difference between the visual literacy skills level of Italian and Turkish students?
2. A. Is there a significant difference in the visual literacy skill levels of Italian students by gender?
   B. Is there a significant difference in the visual literacy skill levels of Turkish students by gender?
3. A. Is there a significant difference in the levels of visual literacy skills according to the grade level of Italian students?
   B. Is there a significant difference in the levels of visual literacy skills according to the grade level of Turkish students?
4. Is there a significant difference in the levels of visual literacy of Italian students by department?

2. Method

Media literacy studies in Europe started with demanding development of policy on this field by European Union Commission of European Parliament in 2005. According to organisations like UNESCO, it can be said that countries couldn’t get along with starting their studies on media literacy. The definition of the media literacy is developed by the experts of the media literacy group. Thus, media literacy education gradually started to gain its importance in European Union in the 2000’s. The other important step is forming organization of the audio-visual media service directives (2007) by the EU. The topic of media literacy has been useful for governments of member states.

The study fosuses on Türkiye and Italy within scope of the study is stem from the rich visual art works of Italy and its fame for protecting historical works of art more than any other countries. Especially, painting and sculpture attract high attention in Italy rather than the rest of

the world as known. For this reason, it is obvious that to live together with this rich visual cultural art heritage for the Italian youth is highly useful for visual literacy. At the same time, determining what kind of studies have been done on visual literacy skills in university education will be helpful for the similar researches in Türkiye. Because, Italy and Türkiye display cultural similarities owing to both being Mediterranean country. As the visual literacy skills studies recently increased in Türkiye, it is predicted that developing these kind of research studies will be helpful and essential for better education. Analysis of visual literacy activity levels of Italian and Turkish students may bring significant contributions to the similar studies in both countries. As a result of this research, there was no significant difference between the visual literacy skill pre-test and post-test scores of the group with the applied visual literacy skill activities. According to this research, there was also no significant difference between applied visual literacy skill activities and group's visual literacy skill pre-test and post-test scores. It was also determined that there was no significant difference in their attitudes towards reading. However, the high average scores of the experimental group shows that visual literacy skill activities have a positive effect on students' visual literacy skills and their attitudes towards reading.

2.1. Research Design

While deciding the research method, the question "What is the best way to evaluate the visual literacy ability of Italian and Turkish students?" was considered. The research scale is obtained by the end of literature review. The scale developed by Arslan and Nalinci (2014) was chosen as a research method tool for the study and applied. It is the scale of visual literacy skills evaluation in higher education. The scale has seven aspects. The original form of the scale is a 5-item Likert type (1-I strongly disagree, 5-I strongly agree) scale.

2.2. Participants

The research was carried out with the students in Turkish department studying at Çanakkale Onsekiz Mart University in the 2018-2019 academic year. Participants are a total of 254 university students. For the Turkish section the research is carried out with students of the 2018-2019 Academic Year who study at Çanakkale Onsekiz Mart University. The participants are a total of 254 undergraduate students. They were volunteer students who wanted to join the study with their own free will and who are studying in Turkish Language Education Department. They were first, second, third and fourth grade students in the department. Acording to Table 1; 66.5% of students are female, 33.5% male. In Turkish Language Education Department female students are more than male ones. The sample is composed of 28 % fisrt grade, 25.6 % second grade, 25.6 % third grade and 20.9% fourth grade students. The age of 25.7 percent of the students is 20. The sample composed of the srudents who are in their 20's in general.

The KMO value has been found to be 0.875. Büyüköztürk (2009) suggests that this value is a perfect result. Yet, according to the Barlett test result (x2=2348.092, p.=.000), it has appeared that the factor analysis can be made because it was determined that the data display a meaningful difference. In the reliability test, the Cronbach Alpha value of the scale was

calculated α= .838. It was noted that the factor loads of the 41 items left in the scale (without rotation) varied between 0,652 and 0,507. In addition, these factor loads varied between 0,542 and 0,764 with rotation after implementation of the Varimax Rotation Technique.

Table 1: Visual Literacy Levels Scale in Higher Education for Türkiye After Using Exploratory Factor Analysis

Items	**Factor Loads**					
	1st Dimension	2nd Dimension	3rd Dimension	4th Dimension	5th Dimension	6th Dimension
Item 1	,737					
Item 2	,764					
Item 3	,582					
Item 4	,542					
Item 5		,594				
Item 7		,549				
Item 11		,629				
Item 12		,638				
Item 14			,591			
Item 15			,699			
Item 16			,811			
Item 17			,604			
Item 23				,669		
Item 24				,689		
Item 25				,733		
Item 28					,636	
Item 29					,713	
Item 30					,734	
Item 31					,617	
Item 35						,566
Item 36						,748
Item 37						,678
Item 38						,690

Item 39						,718
Item 40						,646
Item 41						,690
Total variance explanied	13,563	10,131	9,840	9,043	8,619	7,804
Eigen Values	7,312	2,413	1,589	1,505	1,320	1,201

To determine homologue validity, Exploratory Factor Analysis was carried out for the Visual Literacy Levels Scale in Higher Education .To determine the suitability of the data, factor analysis was done and for sample suitability the test of Barlett Sphericity has been carried out. Kaiser Meyer-Olkin (KMO) sample suitability coefficient 0.875 and Barlett Sphericity test chi square 325 ($p<.001$) was detected. It appears from these results that the data are suitable for factor analysis. As a result of explanatory factor analysis, six factors structure with a eigen value of 15,34 explaining 59% of the total varience was obtained. The results can be obtain from Table 3. The original scale has seven dimensions. The sample regards the university students in Amasya. They are the 3rd and 4th year students studying at Amasya University, Faculty of Education. Our sample includes all the grades of students in Turkish Language Education departmet in Çanakkale Onsekiz Mart University, Faculty of Education. The scale yielded six dimensions after factor analysis. This indicates that there are diffirences in the perception of scale between regions in Türkiye.

Graph 1: Scale of Line Graph

This line graph drawn according to the eigen value of the items in the Scale of Determining the Turkish University Students' Visual Literacy Level

Table 2: Scale Item Total Test Correlation for Turkish Students

DIMENSIONS AND TEST TOTAL SCORES	N=254						
	Needs	Resources	Analysis	Evaluation	Design	Ethics	TEST TOTAL SCORE
Needs	1.00						
Resources	551**	1.00					
Analysis	520**	414**	1.00				
Evaluation	349**	381**	355**	1.00			
Design	481**	420**	475**	390**	1.00		
Ethics	389**	380**	310**	318**	351**		
TEST TOTAL SCORE							1.00**

**0.01

To determine the distinctiveness of the items in the Visual Literacy Scale, an item-total test correlation has been examined. As we can see in Table 3, the item total test correlation values of the scale vary between ,310 and ,551. Büyüköztürk (2009) states that in this subject, the factor load value being 0,45 or higher is a good measure for the selection. It is also important that the distinctivenesses of the items in the Visual Literacy Scale is high, as item-total test correlation values in the scale are higher than 30.

Table 3: Visual Literacy Levels Scale in Higher Education for Türkiye

Sub Aspects of Scale	Working Items	Excluded Items	Reliability Coefficients of Factors α	Explained Variance Ratios of Factors
1.Identification of needed visuals	1,2,3,4	-	,765	13,563
2.Finding and accessing the visual resources	5,7,11,12	6,8,9,10	,668	10,131
3.Analyzing and interpreting the visual	14,15,16,17	13	,754	9,840
4.Evaluating visuals and visual resources	23,24,25	18,19,20,21,22,26	,685	9,043
5.Designing and creating visuals	28,29,30,31	27,32,33,34	,737	8,619
6.Taking ethical and legal issues about visuals into consideration	35,36,37,38,39,40,41	-	,838	7,804
General	26	-	,894	59

Before starting the statistics, the researcher should examine the missing values for each variable (Çokluk, Şekercioğlu and Büyüköztürk 2018:21). Approximate value (series) was assigned in the SPSS package program by the researcher. The old values were called (S1, S2…), the new values without missing values are called (S1_1, S2_1...). The analyse was done with new values.

After this process, the researcher should check the extreme values (Çokluk, Şekercioğlu, Büyüköztürk 2018:24). For this reason, the researcher standardized values analysis to calculate outliers. Then, values were examined with an expert. Items with “Z” value of 3.0 and higher were detected. These items have been removed. Number of items dropped from 262 to 254.

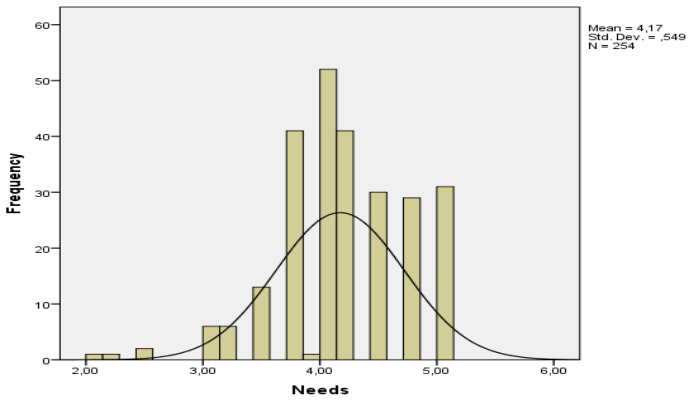


Figure 1. Needs Dimension Normality

For researches which do statistic tests, a parametric test should be an option at first. Therefore, the data must show normal distribution properties (Can 2018: 81-82). The researcher has made the necessary procedures for normality in the SPSS package program. The diagrams of the variable pairs are examined. It has appeared that the diagram shapes are acceptable for normality. It is therefore considered to be normal distrubution. According to normalities; Kaiser Mayer Olkin (KMO) result is checked but in social sciences it is not so easy to find desired numbers such as our result KMO (0.875). Then we checked the Histogram and q.q plot for normality and the data has been considered as normal.

The research for Italian section, the research universe are the students of the 2019-2020 Academic Year who study at La Sapienza University. Participants are a total of 208 under graduate students. They were volunteer students from the Communication, Moda, Antropology, Modern Literature, Philosophy, Biology and Medicine Departments who wanted to join the research with their own free will. They are first, second and third grade students in the departments. The researcher applied the scale not only to the Communication Department but also to other different departments because the number of Communication Department students were not enough for the required sample. They have been studying in the first, second, third grades in these departments. Acording to Table 8; 67,7% of students are female, 32,3% male. The sample is composed of 20,9% fisrt grade, 49,3% second grade , 29,9% third grade students. 23,4% of the students' age is 20. In Italy too, the sample has students generally in their 20's same as Türkiye's sample. Also the research sample is generally related to the students of the Communication Department (50,2%).

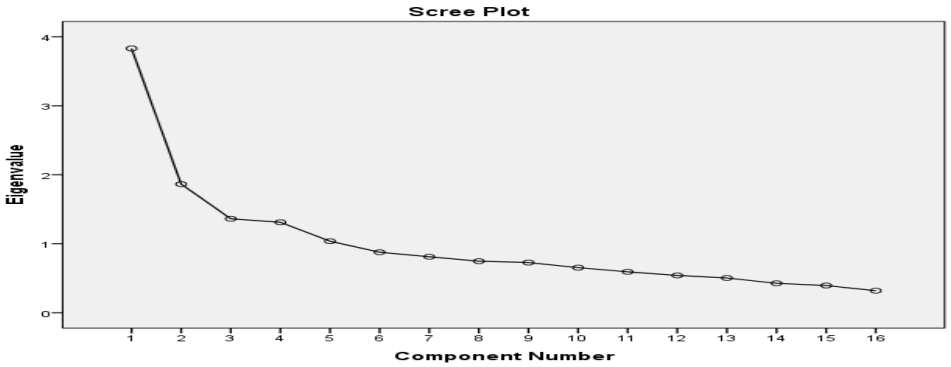
Likewise for Türkiye, as it is for Italy, in statistical analysis, the data with the old values were called (S1, S2…), new values without missing values are called (S1_1,S2_1...). Later the analysis was carried out with new values. For this reason, the researcher standardized values analysis to calculate outliers. Then, values were examined with an expert. Items with "Z" value of 3.0 and higher were detected. These items have been removed. Number of samples dropped from 208 to 201.

Table 4: After Using Exploratory Factor Analysis Visual Literacy Levels Scale in Higher Education for Italy

Items	**Factor Loads**			
	1st Dimension (New)/ 2nd Dimension (Old)	2nd Dimension (New)/ 4th Dimension (Old)	3rd Dimension (New)/ 5th Dimension (Old)	4th Dimension (New)/ 6th Dimension (Old)
Item 7	,646			
Item 8	,677			
Item 12	,761			
Item 18		,638		
Item 20		,697		
Item 21		,670		
Item 22		,560		
Item 27			,592	
Item 28			,757	
Item 29			,734	
Item 30			,713	
Item 35				,697
Item 36				,774
Item 37				,696
Item 38				,662
Item 41				,609
Total variance explanied	16,554	14,176	11,403	10,276
Eigen Values	3,831	1,865	1,362	1,311

When Table 4 is checked, the KMO Barlett ,744 (Sig: ,000) evaluation can be observed. Likewise, according to the Barlett test result (x2=686,294, p.=.000), it has appeared that the factor analysis can be carried out because it was determined that the data reveals a meaningful difference. Factor loads accepted as over 5 can be observe that the factor loads of items constituted the Visual Literacy Scale in Higher Education before rotation varies between 504

and 686 than factor loads after rotation varies between 560 and 774. The Cronbach Alpha value of the scale was calculated α= .770 in the reliability test. An item-total test correlation was analyzed to determine the discriminability of the items in the Visual Literacy Scale. **As seen in Table 8, the item factor load values of the scale vary between 560 and 774.** Büyüköztürk (2009) states that, the factor load value being 0.45 or higher is a good measure for choosing the item. It should be emphasized that the distinctive property of the items in the scale is great, as item factor load values in the scale are higher than 50.



Graph 2: Line Graph for Scale

This line graph drawn according to the eigen values of the items in the Scale of Determining the Italian University Students' in Italy Visual Literacy Level. As it is seen 4 dimensions is suitable for the scale.

Table 5: Scale Item Total Test Correlation for Italian Students

DIMENSIONS AND TEST TOTAL SCORE	N: 201				
	Resources	Evaluation	Design	Ethics	TEST TOTAL SCORE
Resources	1				
Evaluation	,258**	1			
Design	,297**	,411**	1		
Ethics	,265**	,275**	,328**	1	
TEST TOTAL SCORE					1

**0.01

To specify the distinctiveness of the items in the Visual Literacy Scale, an item-total test correlation has been analyzed. As we can see in Table 5, the item total test correlation values of the scale vary between ,258 and ,411. According to Büyüköztürk (2009), the factor load value being 0,45 or higher is a valuable measure for the selection. The distinctivenesses of the items

in the Visual Literacy Scale are high, as item-total test correlation values in the scale are higher than .30.

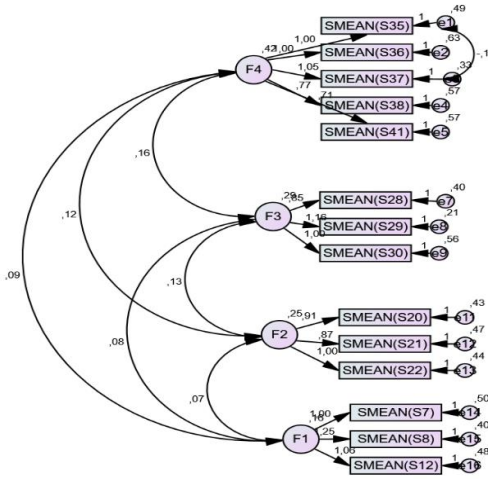
Table 6: Visual Literacy Level Scale in Higher Education Confirmatory Factor Analysis Results

The Scale	ΔX2	df	ΔX2/df	RMSEA	RMR	NFI	GFI	IFI	CFI	TLI
Visual Literacy	102,433	70	1,463	,048	0,43	,828	,933	,938	,936	,916

*p<0,001

Note: ΔX2 =Normal Theory Weighted Least Squares Chi-Square, df = Degrees of Freedom, RMSEA = Root Mean Square Error of Approximation, CFI = Comparative Fit Index, IFI =Incremental Fit Index, NFI= Normed Fit Index.

As observed in Table 6; based on confirmatory factor analysis results, fit index values were calculated as c2= 102,433, GFI=0.93, CFI=0.93, NNFI= .916, NFI=.828, IFI= .938, RMR=0.43 and RMSEA= 0.048. The ratio of the chi-square ratio to the degree of freedom (x2/c2/sd) is 1.46. The fact that this ratio below 3 indicates the model giving a perfect level of fit (Kline, 2005; Sümer, 2000). The RMSEA and RMR values seen in Table 10 are less than 0.1, which means that the model is acceptable (Yılmaz ve Çelik, 2009). The values of CFI, GFI, AGFI and NNFI ranged from 0-1. Since the proposed model is close to 1, it is possible to say that the model is in an acceptable level. Based on the statistical findings obtained, we can say that the factor structure is compatible with the data collected.



Graph 3. Confirmatory Factor Analysis

Confirmatory factor analysis graph drawn according to the eigen value of the items in the Scale of Determining Italian University Students' Visual Literacy Level.

In the confirmatory factor analysis, since the compliance and good fit values were not met, 5 dimensions decreased to 4 dimensions. In addition, since 18 and 27 items had low regression value, the adjustment value was obtained by removing them from the path after confirmatory factor analysis related to the scale was determined with 14 items. Once the scale has been consulted, it can be said that it is ready for quantitative research.

Table 7: Italy (The Last Form of The Scale)

Sub Aspects of Scale		Working Items	Excluded Items	Reliability Coefficients of Factors α	Explained Variance Ratios of Factors
1	**2.Finding and accessing the visual resources**	7,8,12	5,6,9,10,11	,550	16,454
2	**4.Evaluating visuals and visual resources**	20,21,22	19,23,24,25,26	,595	14,176
3	**6.Designing and creating visuals**	28,29,30	31,32,33,34	,704	11,403
4	**7.Taking ethical and legal issues about visuals into consideration**	35,36,37,38,41	39,40	,753	10,276
General		14	-	,781	52,309

3. Results

Findings Related to the Third Sub Problem Sentence

Table 8. Findings regarding whether there is a difference between the genders of Turkish university students on the sub-dimensions for visual literacy or not

Sub Dimensions	Gender	N	X	S	sd	t	p
Needs	Female	169	4,18	,55	252	,54	,58
	Male	85	4,14	,54			
Resources	Female	169	3,80	,61	252	1,33	,18
	Male	85	3,91	,57			
Analysis	Female	169	4,13	,57	252	1,02	,29
	Male	85	4,05	,61			
Evaluation	Female	169	3,63	,72	252	,01	,99
	Male	85	3,63	,72			
Design	Female	169	4,02	,57	252	,20	,83
	Male	85	4,04	,58			
Ethics	Female	169	3,78	,61	252	1,06	,27
	Male	85	3,69	,68			

The levels of visual literacy skills of Turkish students do not differ significantly in all dimensions by gender.

Needs; t(252)= ,54, p>.01. Resources; t(252)= ,18, p>.01. Analysis; t(252)= ,29, p>.01. Evaluation; t(252)= ,99, p>.01. Design; t(252)= ,83, p>.01. Ethics; t(252)= ,27, p>.01. In Needs dimension female's visual literacy skill levels ($\bar{X}$= 4,18), close to male ($\bar{X}$= 4,14). If we look in Resources male ($\bar{X}$= 3,91) and female ($\bar{X}$= 3,80) are close too. In Analysis female ($\bar{X}$= 4,13) and male ($\bar{X}$=4,05) are very close. In Evaluation male ($\bar{X}$= 3,63) and female (X= 3,63) are equal. In Design male ($\bar{X}$= 4,04) and female ($\bar{X}$= 4,02) are very close. And in Ethics male ($\bar{X}$= 3,69) and female ($\bar{X}$= 3,78) are close too.

Findings Related to the Fourth Sub Problem Sentence

Table 9: Findings about whether there is a difference between the sub-dimensions of candidates Turkish teacher for visual literacy and their grade levels.

Sub Dimensions	Source of Varience	Sum of squares	Sd	Mean of Squares	F	P	Significant Difference
	Inter-groups	1,450	3	,483			
	In groups	74,922	250	,300	1,612	,187	
Needs	Total	76,371	253				
Resources	Inter-groups	,599	3	,200			
	In groups	89,918	250	,360	,555	,645	
	Total	90,517	253				
	Inter-groups	1,970	3	,657			
	In groups	86,067	250	,344	1,908	,129	
Analysis	Total	88,037	253				
	Inter-groups	,816	3	,272			
	In groups	132,060	250	,528	,515	,672	
Evaluation	Total	132,876	253				
	Inter-groups	,950	3	,317			
	In groups	83,185	250	,333	,951	,416	
Design	Total	84,135	253				
	Inter-groups	1,308	3	,436			
	In groups	101,948	250	,408	1,069	,363	-
Ethics	Total	103,256	253				

***p<.05**

According to Table 6; towards visual needs, there is no significant relationship between the levels of candidate teachers studying Turkish Language Teaching [F(3-250)= 1,6, p>,05]. According to this, there is no significant diffirence between pre-service teachers' levels of class and visual literacy needs. We can say that needs are similar for all classes.

Towards visual needs, there is no significant relationship between the levels of candidate teachers studying Turkish Language Teaching [F(3-250)= ,555, p>,05]. As we can understand, there is no significant difference between pre-service teachers' level of classes and visual literacy finding and accessing the visual resources. In the other dimension at this level, visual resources are similar for all grades' levels. In education, it is observed that today, similar resources related to visual literacy are used at the universities in the country. There isn't a significant relationship between levels of classes [F(3-250)=1,90, p>,05] within the scope of analyzing and interpreting the visual level. It means that according to pre-service Turkish

teachers analyzing and interpreting dimensions of the visuals are similar at all grade levels. When the other dimension checked "evaluating visuals and visual resources"; no significant relationship between the level of classes of teacher candidates [F(3-250)= ,515, p>,05] has been found. The result shows that pre-service teachers consider that evaluating visuals and visual resources dimension is similar at all levels of classes. Furthermore, there is no significant relationship between the level of class, pre-service Turkish teachers towards dimension of "designing and creating visuals" [F(3-250)= ,951, p>,05]. The researcher can infer for this reason, pre-service teachers considering their perpectives in different classes do not change their visuals in designing and creating. Finally, there is no significant relationship between the level of pre-service teachers towards the dimension of "taking ethical and legal issues about visuals into consideration" [F(3-250)= 1,06, p>,05]. We can understand from this result that Turkish teacher candidates consider similarly by being careful about ethical rules while using images.

Normality by Gender

Table 10: Gender Normality Test Results of Visual Literacy Scores of Italian Students

	Gender	Kolmogorov-Smirnov[a]		
		Statistic	df	Sig.
Last visual literacy	Female	,067	108	,200*
	Male	,095	50	,200*

The Normality of the data was checked with the Kolmogorov-Smirnova test as a normality test. The reason for looking at the Kolmogorov-Smirnova value is that the group size is greater than 50 (Büyüköztürk 2015: 42).

The test results showed that the distribution of scores was normally distributed. For this reason, the Independent Samples T Test, which is one of the parametric tests, was statistically applied (Büyüköztük 2015:39).

Normality by Grade Level

Table 11: Normality Test Results of Italian Students' Visual Literacy Scores Related to Grade Level

	Grade	Shapiro-Wilk		
		Statistic	df	Sig.
Last visual literacy	1st Grade	,955	21	,423
	2nd Grade	,978	37	,666
	3rd Grade	,987	94	,500
	Master	,889	6	,315

The reason for looking at the Shapiro-Wilk value is that the group size is less than 50 (Büyüköztürk 2015: 42).

The test results showed that the distribution of scores was normally distributed. For this reason, one-factor analysis of variance (One Way ANOVA) Test, one of the parametric tests, was applied statistically (Büyüköztük 2015:48).

Normality by Section Level

Table 12: Departmental Normality Test Results of Visual Literacy Scores of Italian Students

	Department	Shapiro-Wilk		
		Statistic	df	Sig.
Last visual literacy	**Verbal**	,990	128	,468
	Quantitative	,970	30	,539

The normality of the data was checked with the normality test Shapiro-Wilk test. The reason for looking at the Shapiro-Wilk value is that the group size is less than 50 (Büyüköztürk 2015: 42). The test result showed that the distribution of scores was not normal. For this reason, non-parametric Mann Whnitney U Test was applied statistically (Büyüköztük 2015:165).

Analysis Results

Gender in Italians

Table 13: T-Test Results of Italian Students' Visual Literacy Scores by Gender

Gender	**N**	$\bar{X}$	**S**	**sd**	**t**	***p***
Female	108	3,9193	,42624	,04101	**-.763**	**.446**
Male	50	3,9743	,40938	,05789		

Visual literacy scores of Italian students did not show a significant difference according to gender. (t (156) = -.763, p < .05). Visual literacy scores of female students ($\bar{X}$= 3.919) were lower than male students' visual literacy scores, but the difference was not significant. This is because it can be said that these skills of both women and men have developed similarly, due to the multitude of historical buildings in Italy and the high importance given to art up to resercher’s opinion.

Grade Level

Descriptive statistics on visual literacy scores are shown in Table 2, and ANOVA results by grade level are shown in Table 3

Table 14: Descriptive Statistics of Italian Students' Visual Literacy Scores

Grade	N	$\bar{X}$	SS
1st Grade	21	3,8129	,42467
2nd Grade	37	4,1409	,42341
3rd Grade	94	3,8853	,40585
Master	6	3,9167	,22775
Total	158	3,9367	,42046

According to the findings, it can be observed that there is a significant difference between the visual literacy scores of Italian students according to the grade level. F (3, 154) = 4.237, p < .01). Visual literacy scores of Italian students differ significantly according to the grade level. The results of Scheffe Test, which was conducted to determine between which classes the differences between the classes are, the visual literacy scores of the 2nd grade students ($\bar{X}$= 4,141) from the visual literacy scores of the 1st grades ($\bar{X}$= 3.813) and the visual literacy scores of the 3rd grades ($\bar{X}$= 3.885) found high. The reason for the significant positive difference in the 2nd grades can be shown as the difficulty of the 1st graders in adapting to the environment because they have just started university. Participation levels in visual arts activities may also be low. 3rd graders may have shown a lower level than 2nd graders due to concerns such as finding a job due to being a senior. The reason for this situation can be investigated in more details.

Table 15: ANOVA Results of Italian Students' Visual Literacy Scores by Grade Level

Source of the variant	Sum of squares	sd	Average of squares	F	*p*	Meaningful differences
Between Groups	2,116	3	,705	4,237	,007	**1-2** **2-3**
Within Groups	25,639	154	,166			
Total	27,755	157				

Table 16: Man Whitney U Test Results of Italian Students' Visual Literacy Scores by Department

Group	N	Mean rank	Mean total	U	*p*

Social sciences	**127**	**83.02**	10544,00	1521,000	,050
Sciences	**31**	**65.06**	2017,00		

NORMALITIY TEST FOR ITALIAN STUDENTS

Table 19: Gender

Tests of Normality

	Gender	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
last_visual_literacy	Woman	,067	108	,200*	,989	108	,544
	Man	,095	50	,200*	,971	50	,265

*. This is a lower bound of the true significance. a. Lilliefors Significance Correction

Tablo 17: Gender Normality Test Results of Visual Literacy Scores of Italian Students

	Gender	Kolmogorov-Smirnov[a]		
		Statistic	df	Sig.
last_visual_literacy	Woman	,067	108	,200*
	Man	,095	50	,200*

Normality of the data was checked with the Kolmogorov-Smirnova test as a normality test. The reason for looking at the Kolmogorov-Smirnova value; group size is greater than 50 (Büyüköztürk 2015: 42).

The test results showed that the distribution of scores was normally distributed. For this reason, the Independent Samples T Test, which is one of the parametric tests, was statistically applied (Büyüköztük 2015:39).

Table 18: Normality by Grade Level

Tests of Normality

	Class	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
last_visual_literacy	1st Grade	,113	21	,200*	,955	21	,423
	2nd Grade	,128	37	,134	,978	37	,666
	3rd Grade	,060	94	,200*	,987	94	,500
	Master	,252	6	,200*	,889	6	,315

*. This is a lower bound of the true significance. a. Lilliefors Significance Correction

Table 19: Normality Test Results of Italian Students' Visual Literacy Scores Related to Grade Level

	Grade	Shapiro-Wilk		
		Statistic	df	Sig.
last_visual_literacy	1st Grade	,955	21	,423
	2nd Grade	,978	37	,666
	3rd Grade	,987	94	,500
	Master	,889	6	,315

The reason for looking at the Shapiro-Wilk value is; group size is less than 50 (Büyüköztürk 2015: 42).

The test results showed that the distribution of scores was normally distributed. For this reason, one-factor analysis of variance (One Way ANOVA) Test, one of the parametric tests, was applied statistically (Büyüköztük 2015:48).

Table 20: Normality by Section Level

Tests of Normality

	departmentnew	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
last_visual_literacy	1,00	,069	128	,200*	,990	128	,468
	2,00	,135	30	,168	,970	30	,539

*. This is a lower bound of the true significance. a. Lilliefors Significance Correction

Table 21: Departmental Normality Test Results of Italian Students'Visual Literacy Scores

	Departmant	Shapiro-Wilk		
		Statistic	df	Sig.
last_visual_literacy	**Sözel**	,990	128	,468
	Sayısal	,970	30	,539

The normality of the data was checked with the normality test Shapiro -Wilk test. The reason for looking at the Shapiro-Wilk value is; group size less than 50 (Büyüköztürk 2015: 42). The test result showed that the distribution of scores was not normal. For this reason, non-parametric Mann Whnitney U Test was applied statistically (Büyüköztük 2015:165).

ANALYSIS RESULTS

Gender in Italians

Table 22: T-Test Results of Italian Students' Visual Literacy Scores by Gender

Gender	**N**	$\bar{X}$	**S**	**sd**	**t**	***p***
Woman	108	3,9193	,42624	,04101	**-.763**	**.446**
Man	50	3,9743	,40938	,05789		

Table 23: Group Statistics

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
last_visual_literacy	Woman	108	3,9193	,4264	,04101
	Man	50	3,9743	,40938	,05789

Visual literacy scores of Italian students did not display a significant difference according to gender. ($t_{(156)}$= -.763, $p > .05$). Visual literacy scores of female students ($\bar{X}$= 3.919) are lower than male students' visual literacy scores, but the difference was not significant. This is because; it can be said that due to the abundance of historical buildings in Italy and the high importance given to art, these skills of both women and men have developed similarly.

Grade Level

Descriptive statistics on visual literacy scores are shown in Table 27, and ANOVA results by grade level are shown in Table 28.

Table 24: Descriptives

Descriptives

last_visual_literacy

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1st Grade	21	3,8129	,42467	,09267	3,6196	4,0062	2,93	4,43
2nd Grade	37	4,1409	,42341	,06961	3,9998	4,2821	3,21	5,00
3rd Grade	94	3,8853	,40585	,04186	3,8021	3,9684	2,64	4,86
Master	6	3,9167	,22775	,09298	3,6777	4,1557	3,57	4,14
Total	158	3,9367	,42046	,03345	3,8706	4,0028	2,64	5,00

Table 25: Descriptive Statistics of Italian Students' Visual Literacy Scores

Grade	**N**	$\bar{X}$	**SS**
1st Grade	21	3,8129	,42467
2nd Grade	37	4,1409	,42341
3rd Grade	94	3,8853	,40585
Master	6	3,9167	,22775
Total	158	3,9367	,42046

According to the findings, it is seen that there is a significant difference between the visual literacy scores of Italian students according to the grade level $F_{(3, 154)}$= 4,237, $p < .01$). Visual literacy scores of Italian students differ significantly according to grade level. The results of Scheffe Test, which was conducted to determine between which gradees the differences between gradees, were found higher than the visual literacy scores of the 2nd grade students ($\bar{x}$= 4,141) than the visual literacy scores of the 1st grades ($\bar{x}$= 3.813) and the visual literacy scores of the 3rd grades ($\bar{x}$= 3.885). The reason for the significant positive difference in the 2nd grades can be shown as the 1st graders having difficulty in adapting to the environment because they have just started university. 1th grade students participation levels in visual arts activities may also be low. 3rd graders may have shown a lower level than 2nd graders due to concerns such as finding a job due to being a senior. The reason for this situation can be investigated in more detail.

Table 26: ANOVA for Last Visual Literacy

ANOVA

last_visual_literacy

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,116	3	,705	4,237	,007
Within Groups	25,639	154	,166		
Total	27,755	157			

Table 27: ANOVA Results of Italian Students' Visual Literacy Scores by Grade Level

Varyansın kaynağı	**Kareler Toplamı**	**sd**	**Kareler Ortalaması**	**F**	***p***	**Anlamlı Fark**
Between Groups	2,116	3	,705	4,237	,007	**1-2** **2-3**
Within Groups	25,639	154	,166			
Total	27,755	157				

Table 28: Department

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
last_visual_literacy	158	3,9367	,42046	2,64	5,00
Departmentnew	158	1,1962	,39839	1,00	2,00

Ranks

	departmentnew	N	Mean Rank	Sum of Ranks
last_visual_literacy	Social sciences	127	83,02	10544,00
	Sciences	31	65,06	2017,00
	Total	158		

Test Statistics[a]

	last_visual_literacy
Mann-Whitney U	1521,000
Wilcoxon W	2017,000
Z	-1,962
Asymp. Sig. (2-tailed)	,050

a. Grouping Variable: department new

Table 29: Man Whitney U Test Results of Italian Students' Visual Literacy Scores by Department

Group	**N**	**Sıra ortalaması**	**Sıra Toplamı**	**U**	***p***
Social sciences	**127**	**83.02**	10544,00	1521,000	,050
sciences	**31**	**65.06**	2017,00		

Descriptive Statistics

Descriptive statistics of the participants were analyzed and the results were presented in tables.

Ages of Italian and Turkish Students

When the distribution of the students according to their ages is examined, the average age of the Italian students is 21.26 (SD = 3.10), while the average age of the Turkish students is 20.40 (SD = 2.10). On the other hand, 9 of the students (% 3.5) did not specify their ages.

Table 30: Distribution of Italian and Turkish Students by Gender

Country	Gender	Frequency	Percent
Italy	Female	108	68.4
	Male	50	31.6
	Total	158	100.0
Türkiye	Female	169	66.5
	Male	85	33.5
	Total	254	100.0

When the distribution of students by gender is examined, 68.4% of Italian students are women, 31.6 % are men; on the other hand, 66.5 % of Turkish students were women and % 33.5 were men.

Table 30: Distribution of Italian and Turkish Students by Grade Level

Country	Grade	Frequency	Percent
Italy	First grade	21	13.3
	Second grade	37	23.4
	Third grade	94	59.5
	Master	6	3.8
	Total	158	100.0
Türkiye	First grade	71	28.0
	Second grade	65	25.6
	Third grade	65	25.6
	Fourth grade	53	20.9
	Total	254	100.0

When the distribution of students by grade is examined, it is observed that 13.3 % of Italian students are first graders, 23.4 % are second graders, 59.5 % are third graders, 3.8 % are in master classes, while Turkish students are 28 % first graders, 25.6 % second graders, 25.6 % third graders and 20.9 % fourth graders.

Table 31: Distribution of Italian Students by Department

Country	Department	Frequency	Percent
Italy	Social Sciences	127	80.4
	Sciences	31	19.8
	Total	158	100.0

When the distribution of Italian students according to the department they study is examined, 80.4 % of the students are studying in social sciences, while 19.4 % are studying in numerical sciences.

Normality of Data

To determine the statistical methods to be chosen for analyzing the data of the research, it was tested whether the data met the normality assumption.

Table 32: Normality Test Results Regarding Visual Literacy Scores of Italian and Turkish Students by Gender

Country	Gender	Kolmogorov-Smirnov		
		Statistic	df	Sig.
Italy	Female	.067	108	.200
	Male	.095	50	.200
Türkiye	Female	.034	169	.200
	Male	.062	85	.200

The compatibility of the visual literacy scores of the students with the normal distribution according to their gender was tested with the Kolmogorov Smirnov test. The results showed that the visual literacy scores of both Italian students ($p > .05$) and Turkish students ($p > .05$) were normally distributed according to their genders.

Table 33: Normality Test Results Regarding Visual Literacy Scores of Italian and Turkish Students by Grade Level

	Grade	Shapiro Wilk		
		Statistic	df	Sig.
Italy	First grade	.955	21	.423
	Second grade	.978	37	.666
	Third grade	.987	94	.500
	Fourth grade	.889	6	.315
		Kolmogorov-Smirnov		
Türkiye		Statistic	df	Sig.
	First grade	.068	71	.200
	Second grade	.053	65	.200
	Third grade	.044	65	.200
	Fourth grade	.118	53	.065

The compatibility of the visual literacy scores of the students with the normal distribution according to their grade level was tested with the Shapiro Wilk test due to groups with less than 29 students in Italian students; the normality test of Turkish students was done with the Kolmogorov Smirnov test. Shapiro Wilk test results showed that the visual literacy scores of Italian students according to grade level were in accordance with normal distribution ($p > .05$). The Kolmogorov-Smirnov test results regarding the normality of the distribution of Turkish students' visual literacy scores by grade level revealed that Turkish students' visual literacy scores were in line with the normal distribution. ($p > .05$).

Table 34: Normality Test Results Regarding Visual Literacy Scores of Italian Students by Department

	Grade	Kolmogorov Smirnov		
		Statistic	df	Sig.
Visual literacy	Social Sciences	0.70	127	.200
	Sciences	.118	31	.200

The compatibility of the visual literacy scores of Italian students with the normal distribution according to the departments they studied was examined with the Kolmogorov-Smirnov test. The results showed that the visual literacy scores of the students according to the grade level were in accordance with the normal distribution ($p > .05$).

Table 35: Statistics on Visual Literacy of Italian and Turkish Students

	Country	N	Mean	SD	Minumum	Maksimum
Visual literacy	Italian	158	3.937	.421	1	5
	Türkiye	254	3.926	.434		

When the visual literacy of the students is analyzed, it can be stated that the visual literacy average score of the Italian students is M = 3.937 (SD = .421) which is a good level considering as the highest score 5 that can be obtained from the scale. The visual literacy average score of Turkish students was determined as M = 3.926 (SD = .434). In this context, it can be said that the visual literacy scores of Turkish students are at a good level as well.

Two-way analysis of variance was used to determine whether the gender of the students and the country they live in affect their visual literacy. Analysis was performed in 2 (gender) X 2 (country) design. Descriptive statistics of the data before analysis of variance are given in Table 38.

Table 36: T-Test Results Regarding Visual Literacy Scores of Italian and Turkish Students by Gender

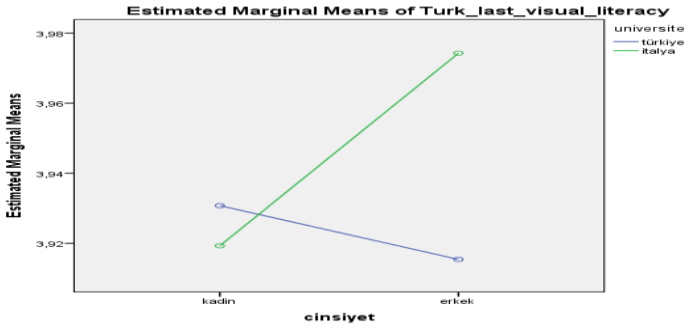
		Country					
		Italy			Türkiye		
		Mean	SD	N	Mean	SD	N
Gender	Female	3.919	.426	108	3.931	.442	169
	Male	3.974	.409	50	3.915	.418	85
	Total	3.937	.421	158	3.926	.434	254

Whether the visual literacy scores of Italian and Turkish students differ according to their genders was examined with the independent samples t-test. When the scores of Italian students by gender were analyzed, it was found that women's visual literacy scores were M = 3.919 (SD = .426) lower than men's visual literacy scores M = 3.974 (SD = .409). However, t test results showed that this difference was not significant ($t_{(156)}$ = -.763, p = .446). When the visual literacy scores of the Turkish students are examined according to their gender, the visual literacy scores of women are M =3.931 (SD = .442) higher than the visual literacy scores of men M = .3.915 (SD = .418). It was found that the visual literacy scores of Turkish students were not significantly different according to their genders ($t_{(252)}$ = .265, p = .791).

Table 37: Two-way Analysis of Variance Results on Visual Literacy Scores of Italian and Turkish Students According to Their Country of Residence and Gender

Variance sources	Sum of squares	*df*	Mean square	F	Sig.	Partial Eta Squared
Country	.048	1	.048	.260	.611	.001
Gender	.033	1	.033	.182	.670	.000
Country*Gender	.105	1	.105	.571	.450	.001
Error	75.217	408				
Total	6438.268	412				
Model: $F_{(3, 232)}$ =.232, p = .874, R Squared = .002, (Adjusted R Squared = .006)						

The findings obtained with the 2x2 analysis of variance showed that the country of residence did not affect the visual literacy scores (F = .182, p = .611). In the analysis, it was found that there was no significant difference in the visual literacy scores of women and men (F = 182, p = .670). It was determined that the country of residence and gender interaction did not affect visual literacy (F = 2.748, p = .098). The effects of country of residence and gender on visual literacy are independent from each other. It has been observed that being a woman or a man does not make a difference in the effect of the country of residence on visual literacy.



Graph 4. Country- Gender Interaction

When the findings obtained in the two-way analysis of variance are examined on the graph, it can be stated that the country and gender do not affect visual literacy together. On the graph women and men have visual literacy scores that are quite close. The visual literacy score of Italian female students is M = 3.919, while the visual literacy score of Italian male students is M = 3.974. The difference is a very low value like .055. Likewise, the visual literacy score of Turkish female students is M = 3.931, while the visual literacy score of Turkish male students is M = 3.915. The difference, existing at .016 between women and men, is also lower than that between Italian students.

A two-way analysis of variance was used to determine whether the students' grade and the country they live in affect their visual literacy.

Table 38: Two-Way Analysis of Variance Results on Visual Literacy Scores of Italian and Turkish Students According to Their Country of Residence and Grade Level.

		Country					
		Italy			Türkiye		
		Mean	SD	N	Mean	SD	N
Gradees	First grade	3.813	.425	21	3.945	.386	71
	Second grade	4.141	.423	37	3.939	.385	65
	Third grade	3.885	.406	94	3.843	.490	65
	Fourth grade	3.917	.228	6	3.984	.373	53
	Total	3.937	.421	158	3.253	.434	254

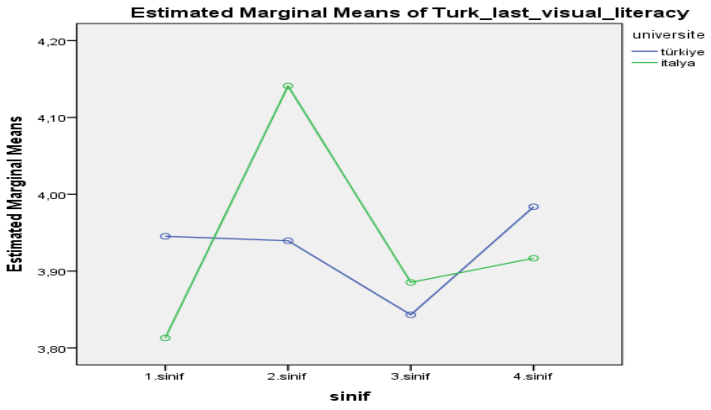
When the visual literacy scores of the students according to their countries and grade levels are examined, it can be seen that the visual literacy scores of the Italian students are ranked from high to low according to the grade level, second graders M = 4.141 (SD = .423), fourth graders M = 3.917 (SD = .228), third graders M = 3.885 (SD = .406) and first graders are ranked as M = 3.813 (SD = .425) respectively. A one way analysis of variance was used to determine whether there was a significant difference between these scores. The results showed that there was a significant difference between the scores (F = 4.237, p = .007). In order to determine the difference between the grades, Tukiye's method, used in pairwise comparisons, was used since

the variances were homogeneous. The results of the analysis showed that the visual literacy scores of the second graders were significantly higher than the first and third graders. The order of the distribution of visual literacy scores of Turkish students according to grade levels from highest to lowest is fourth grade M = 3.984 (SD = .373), first grade M =3.945 (SD = .386), second grade M = 3.939 (SD = .385), and third grade students classes were found to be M = 3.843 (SD = .490). The results of the one-way analysis of variance regarding the difference in the scores of Turkish students according to the grade level showed that there was no significant difference in visual literacy scores between the classes. (F = 1.175, *p* = .320).

Table 39: Results of Two-Way Analysis of Variance Regarding Visual Literacy Scores of Italian and Turkish Students According to Their Country of Residence and Grade Level

Variance sources	Sum of squares	*df*	Mean square	F	Sig.	Partial Eta Squared
Country	.006	1	.006	.035	.852	.000
Grade	1.968	3	.656	3.653	.013	.026
Country*Grade	1.155	3	.385	2.144	.094	.016
Error	72.556	404	.180			
Total	6438.268	412				
Model: $F_{(7,412)}$ = 2.219, *p* = .032, R Squared = .037, (Adjusted R Squared = .020)						

The findings obtained with the 2x2 analysis of variance showed that the country of residence factor did not affect visual literacy (F = .035, *p* = .852). Thus, the country of residence does not affect visual literacy. In the analysis, it was found that there was a significant difference in the visual literacy scores of the students according to their grade levels (F = 3.653, *p* = .013). Grade levels of students affect visual literacy. Eta squared was found to be .026. This value shows that the effect of grade level on the change in visual literacy is 26 %. It was determined that the interaction between country of residence and grade level did not affect visual literacy (F = 2.144, *p* = .094).



Graph 5. Living Country-Grade Level Interaction

When the findings obtained from the two-way analysis of variance are examined on the graph, it can be stated that the country and grade level do not affect the visual literacy together. The graph of the Italian student group shows that second graders have higher visual literacy mean scores than other graders. The visual literacy graph of Turkish students shows that third graders have lower visual literacy scores than other graders.

Independent samples t-test was used to determine whether the visual literacy mean scores of Italian students were different according to the departments they studied.

Table 40: T-Test Results of Visual Literacy Scores of Italian Students According to the Department They Studied

	Grade	Mean	SD	t	Sig.
Visual literacy	Social Sciences	3.968	.419	1.906	.059
	Sciences	3.809	.408		

When the visual literacy scores of the Italian students were compared according to the department they studied, the average score of the students studying in social sciences was M =3.968 (SD = .419) higher than the mean score of students studying in numerical sciences M =3.809 (SD = .408). Independent samples t-test results on whether this difference is significant or not show that the difference is not significant (t = 1.906, p = .059).

The research's results;

1. It can be said that the visual literacy scores of Italian and Turkish students are at a good level.
2. The visual literacy scores of Italian and Turkish students did not differ significantly by gender.
3. The findings showed that the country of residence did not affect the visual literacy scores.
4. It has been shown that the country of residence and gender interaction do not affect visual literacy.
5. Considering the visual literacy scores of Italian students according to the grade levels, it was seen that there was a significant difference between the results. The results of the analysis showed that the visual literacy scores of the second graders were significantly higher than the first and third grades. On the other hand, it is seen that there is no significant difference according to the grade levels of Turkish students.
6. When the visual literacy scores of Italian students were compared according to the department they studied, the t-test results showed that the difference was not significant.

4. Discussion, Conclusions and Suggestions

Sense of visuals may mean different for all people. If this was not so, Tycho and Kepler, Simplicus and Einstein, De Breoglie and Born, Heisenberg and Bohm could not have made the same observations. They were investigating similar issues, and interpreted these observations in diffirent ways. It means that observations on similar topics can lead to diffirent perceptions. It would not be wrong to say that the permission in the retina leads to different perceptions that many appearances could be vague. Images are ambiguous, which can be viewed as various organizations. Sometimes they can allow multiple definitive organizations. Max Wertheimer emphasized that if the figure is reconstructed while solving a geometry problem, the solution can be easily reached. In geometry, the same visual stimulus can have two diffirent perception data. Sometimes one of them takes us away from the solution while the other is suitable. For example; it is the footprint in the sand. This trail allows us to see the foot that is not there. As a matter of fact, most of the human abilities and the progress of humanity are caused by the practice of such (Arnheim 2018: 334-337).

Today, ıt is known that media and visual literacy have become increasingly significant for human life. Especially in political, economic, scientific subjects concerned with visuals and media. It remains of this importance each day. Obviously, media and visuals are relevant to processes communication for people. No matter when we start in history using visuals, the trends and popularities are always changing fast. So media and visuals are changing in this way (Hug 2012: 116). In September-October 2016, a research was done (Lopatovska, Carcamo, Dease, Jonas, Kot, Pamperien, Volpe and Yalçın 2018: 592-600) in Brooklyn Public Library. A library staff member recruited 30 children who are voluntary library visitors. Four workshops were carried out with these children who are 2,5-4 years old. They participated in voluntary visual literacy workshops. This workshops that spent more time on discussion about colour and line. The other workshops spent less time on discussion and more time on activity about shapes and textures. In these workshops, children were given fewer opportunities to talk about visual elements. According to the research results regarding children's interests in visual literacy elements; some visual literacy elements are specifically colour and texture. Researchers saw that these solicited more interest and generated more active responses among the children. According to earlier studies, young children's natural inclination focused on colours. These workshops developed children understanding of colour, temperature and primary colours, perspective, relations between objects and shapes, textures in nature and painting techniques (Gardner, 1970; Eckhoff, 2010; Yenawine, 2003).

According to Turkish university students, visuals are important for mnemonic for their lessons' informations. Students obtain necessary information through visuals. In higher education, both students and lecturers need information more efficiently via digital technologies. It is important for e-learning, distant learning and face-to-face learning methods. For this reason, students in higher education should be able to both correctly analyze the visuals and pictures. On the other hand, students in higher education should learn how to take information from visuals and communication technologies.

The researcher completed the last research questions for the part of Türkiye and Italy. According to the results; students need training on visual literacy. They think visual literacy is useful in human life. The following suggestions can be given for future researchers:

1. Comparative studies can be conducted in different countries. This can reveal the thoughts of individuals about visual literacy in different cultures.
2. According to the results of the research, most of the students did not receive any training on visual literacy. Preparing a visual literacy training program can be beneficial for education at universities.
3. A research also can also be conducted with academicians on visual literacy education. Thus it can be ensured that this skill is developed by taking their opinions.

All in all, researches conducted to date has emphasized the importance of visual literacy (Eco 1978, Dewey 1969, Prensky 2001, Shurtleff 2008, , Lee 2010, Pezzini 2011, Kaya 2012, Çelik 2017). The lessons in which visuals are used remain in the memory of the students, like the delicious meals that leave a mark on the plate.

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