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Determination of the colour preferences of 5th grade students in relation to gender

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The purpose of this research is to determine the colour preferences of 5th grade students in relation to the concept of gender. The study was conducted with the 19 5th grade students studying at Central District of Bartın Province in 2015 to 2016 academic year. Throughout the research, quantitative research method had been used while survey had been used as the research method and a questionnaire prepared by the researcher had been utilized as data collection tool. Data collected during the research revealed that colour preferences in relation to gender perception are pink and purple for women and blue, light blue, green, light green, black, red and gray for men.

Key words: Class, student, social gender, colour, preference.

INTRODUCTION

The first relation of an individual with the concept of gender starts with the moment he/she learns that his/her parents will have a child. The gender of the child to be born is important; because the baby will be named, the baby room will be decorated and toys, and clothing of the baby will be bought in accordance with this. Thus, individual meets the concept of gender for the first time with the birth and swaddle of the baby with pink or blue clothes in patriarchal societies.

Concept of gender is not a biological phenomenon. Sex itself is biological. Sex is a physical characteristic exhibiting the biological and physiological differences among all living creatures complementing each other as female and male for reproduction. This characteristic is also valid for humans as living creatures. In human structure, there are 46 chromosomes half of which is inherited from the mother and the remaining half from the father, and which are divided as x and y, and thus become influential in sexual determination during insemination. In this process, there are x chromosomes in each egg produced by the mother. If the sperm of the father carries x chromosome as well, the sex of the child to be born is female; while it is male if sperm of the father carries y chromosome (San Bayhan and Artan, 2011; Koyun and Örnek, 2013). The gender is a concept and definition explaining the separation of men and women, and affecting the individuals' behaviors, attitudes and life styles. Basically, this term has losed the property of being impartial concept between the race of men and women, and gained social content (Arıcı, 2011). According to the feminist theoreticians, gender is named related to social-historical and sex is about biological (Sancar et al., 2006). Butler (2008) states that as the result of separation between gender, gender is the biological difference between men and women, and social gender is the separation of the roles of men and women (Yazıcı,

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2016).

Differences are seen in the lives of these two sexes starting from the birth. There are two different views about those differences; one argues that those differences derive from biological grounds while the other one consider it as the result of environmental factors. The difference derived from biological grounds is explained with the help of the concept of sex, while the influence of the environmental factors resulted in the emergence of a new concept called gender and explanation of the difference between female and male with separate themes at separate platforms. There is no absolute judgement in relation to sex determining the gender (Giddens, 2008). Gender is used for bringing order to the social relations between woman and man. In other words, it is a category forcefully imposed to a body. Nevertheless, some argue that sex should find expression in the concept of gender as well with the same meaning with the concept of gender; because, according to them it is hard to differentiate the concepts of sex and gender due to the similarity between two concepts (Scott, 2007).

Gender is the concept which suggests how an individual must be perceived by the society due to her/his sex. It is possible to include dressing preferences, gestures, thinking styles, expression of the emotions and human relations of the individuals in his perception (Helman, 1990). Sometimes these perception differences expected by the society are separated with hard lines. According to Sancar (2011), women and men have characteristics defined as different and even as exclusionary contrasts as well. Those characteristics have transformed stereotyped judgements. Stereotyped judgements are rigid and generalized beliefs related with the behavioural and psychological situations believed to be belonging to themselves by women and men. Since childhood, cultural, economic and political factors have an influence over those generalized beliefs. The judgments came into existence thanks to all written texts that are kept up-to-date, they are featured as emotional rather than rational, and are pretty resistant against change (Strong and Devault, 1994; Kağıtçıbaşı, 2006).

Starting from the childhood period, the individual faces many behaviour models and patterns of the society in accordance with her/his sex. It is pretty normal for the individual to internalize this situation and to carry it to the future because she/he frequently faces similar examples at home, school, street and media. Dressing, toy and colour preferences can be considered as the examples of this situation. If the study is to detail the colour preference among those examples, blue and pink has established a general perception for men and women respectively (Connel, 1998; Seçgin, 2012).

Colour

The effect in people's eyesight of the light after running into objects and reverberating is called colour. Colour is expressed rather with visual perception since people perceive colours by using eyesight in people's daily life (Artut, 2007; Gökaydın, 2003). Visual perception is a sensual awareness and the ability to distinguish the existence and the background, and to understand the visual features of the existence (Özsoy and Alakuş, 2009).

For visual perception to become affective and perception of the colours, human nature needs light. Only in enlightened environments and thanks to light it is possible to see the colours. When people look at objects, people perceive the colours first. Every object has colour. When objects are exposed to sun light, they reverberate all of the part of the light depending on their physical constitution. The colour rays are firstly transmitted to the retina of the eye and then to the brain, and this enables the perception of the colour (Bodur, 2006; Etike, 2001; Ertok, 2014). However, even though the colours of the objects are same, they may not be perceived identical at all times; since there are some factors which can affect the perception of the colours. These are the colour of the light, the density of the light and the atmosphere between the object and the perceiver. The colour of the light may turn to a bluish white colour at dawn, to grayish at a cloudy day, to yellowish at a sunny day and to orange at dusk and all colours are possible with artificial light. When reverberated, those colour rays cause misperception of the colours of the objects. The density of the light affects colours as well. When the natural density of the colour decreases, the influence of the light decreases and it starts to turn blue. On the other hand, atmosphere between the perceiver and the object affects the colour as well. As the distance between us and the objects grows, the atmospheric space grows; and this also affects the perception of the colour. For example, the reason behind arousing a gray and blue perception of the far away mountains sighted is not that they are originally gray or blue, rather it is because of the atmosphere between (Parramon, 1991). Colours are categorized as main colours, intermediate colours, neutral colours, warm colours, cold colours and transverse colours. *Main colours:* Yellow, red and blue. *Intermediate Colours:* Green, purple and orange. *Neutral Colours:* Black, white and gray. *Warm Colours:* Yellow, red and orange. *Cold Colours:* Blue, green and purple. *Transverse Colours:* Yellow, purple, green, red, blue, orange (Kılıçkan and Kılıçkan, 1996).

Because colours exist constantly in people's daily lives and excite different emotions, and because they are communication tools used for expressing people's emotions, they have several different effects on human psychology (Tepecik, 2002; Ünver, 2002; Buyurgan and Buyurgan, 2012; Kılıçkan and Kılıçkan, 1996; Yılmaz, 2010): *Red:* Most powerful vibration, exciting and provocative effect, stimulates the concepts of blood and warmth in mind. *Yellow:* Arouses feeling of joy, liveliness and warmth, stimulates neural system and eases blood

flow. *Blue:* The symbol of purity, eternity and freedom. *Orange:* Gives the sense of joy of living and the brightness and warmth of the sun. *Green:* Relaxing and soothing, colour of youth and recreation. *Purple:* Arouses the sense of melancholy and introversion by evoking pessimism and uncertainty. *Black:* Colour of mourning and sorrow. *White:* Symbolizes cleanness, purity and innocence. *Gray:* Evokes a mature, cautious and peaceful sense.

Child is affected by the society with the formal education process. The society provides messages about social gender roles in this process (Gökçe, 1996). They accept the signs that are not stated orally before they name themselves as men/women. For example, the colors as visual signs have importance in the education of children because the colors of toys, books and television programs emphasize the differences between the properties of men and women (Giddens, 2008). The concept of the study was not conducted to the study group of the study.

However, the study group would have the effective role in changing and development of social structure. Human being is not only squawk but also skin.

The human as psycho-physics whole is formed by the conditions of squawk and skin. The main problem of a country is changing individuals since individual is formed in the similar way made for society by the conditions of economical-social (Sun, 1969). With the colors having effect on human psychology and gender, the social gender is also being encouraged by the effects of colors on gender, and this was aimed to identify the study group's choices of color and to evaluate the content of the study based on a analyst views by sex-oriented approaches.

METHODOLOGY

In this study, survey design which is one of the quantitative research methods used for the determination of gender-based colour preferences of 5th grade students are also related to women and men. Basic principal of quantitative research is used to express and measure the collected data with numerical values. Besides, attributing research to hypotheses and testing those hypotheses are one significant principles of quantitative research. According to Creswell (2013), quantitative research method is an approach that tests objective hypotheses by analysing the relationship between variables.

Participants

This research was conducted with the 5th grade students who are 11 years old studying at junior high schools in the Central District of Bartın Province. Simple random sampling was employed for the selection of the participants. According to Erkuş (2013), in simple random sampling the possibility of participating to the sample group is equal and independent for each unit in the universe. In this connection, 19 5th grade students of İMKB Junior High School taking elective visual arts course constituted the participants of the research. 74% of the students are female and 26% are male (n=5).

Data collection tool

In order to determine the colour preferences of the students as they relate to women and men, a measurement tool was prepared and used by the researcher in accordance with the views of two specialised academicians and after a necessary simplification. Measurement tool was composed of two parts. First part included 3 boxes for painting the colours associated with women. First box is for the first colour they think belonged to women, while the second and third boxes are for the second and the third colour preferences respectively. Second part is an adapted version of the first part for men. A pastel set including 24 colours was given to each student by the researcher in order to equalize the conditions for colour usage while students are indicating their preferences, and students applied their colour preferences without interacting with each other by using the pastel they received.

Data analysis

Descriptive statistical methods (numbers, percentage, average, standard deviation) were used during the evaluation of the data. Descriptive statistics were calculated for the colours picked by students for women and men; chi-square analysis was conducted for determining whether there was a significant difference or not between the colour choices of female and male students. Acquired findings were interpreted at 95% confidence interval, and 5% significance level.

FINDINGS

Table 1 indicates the colours preferred by 19 students for women without sorting. As it is seen in the table, mostly preferred colours are purple and pink, while dark pink comes at second place and orange, dark green and light green were the ones preferred least. It is also observed that warm and cold colours were used together and the transverse colours such as yellow-purple, orange and blue were among the preferences.

Table 2 indicates the colours preferred by 19 students for men without sorting. As it is seen in the table, the most preferred colour is blue, while green and gray come at second place with same numbers and yellow, dark green and brown were the ones preferred least. Preferred colours are mostly cold colours. These are green, blue, dark green, dark blue, light green and light blue.

When Table 3 is analysed, the first colours picked for women are found to be red, dark pink, purple, pink. Male students picked only transverse colours like purple and yellow while female students mainly preferred warm colours like pink, dark pink and red. The result of chi-square conducted for determining whether there is a significant difference or not between female and male students was calculated as 10.159 and this value was found significant at 4 degree of freedom ($p<0.05$). In other words, the colours picked by female and male students are different from each other.

When the descriptive statistics belonging to the second colour preference for women in Table 4 are observed, preferred colours are found to be light pink, light green, dark pink, dark green, blue, purple and pink. All three

Table 1. The distribution indicating the colours chosen by the students for women.

Variable	Frequency	%
Light pink	3	5.3
Light green	1	1.8
Red	4	7.0
Dark pink	8	14.0
Dark green	1	1.8
Blue	2	3.5
Purple	17	29.8
Pink	17	29.8
Yellow	3	5.3
Orange	1	1.8
Total	**57**	**100.0**

Table 2. The distribution indicating the colours chosen by the students for men.

Variable	Frequency	%
Light blue	7	12.3
Light green	3	5.3
Gray	8	14.0
Brown	6	10.5
Red	2	3.5
Dark blue	5	8.8
Dark green	1	1.8
Blue	10	17.5
Yellow	1	1.8
Black	6	10.5
Green	8	14.0
Total	**57**	**100.0**

Table 3. The distribution indicating the first colours chosen by the students for women.

Variable	Sex		Total
	Male	Female	
Red	0	2	2
Dark pink	0	4	4
Purple	4	3	7
Pink	0	5	5
Yellow	1	0	1
Total	**5**	**14**	**19**

shades of the pink colour are also observed in the preferences of male students. The result of chi-square conducted for determining whether there is a significant difference or not between female and male students'. 2nd colour preference was calculated as 7.58 and this value was not found significant at 6 degree of freedom ($p<0.05$).

Table 4. The distribution indicating the second colours chosen by the students for women.

Variable	Sex		Total
	Male	Female	
Light pink	1	0	1
Light green	0	1	1
Dark pink	1	1	2
Dark green	0	1	1
Blue	0	1	1
Purple	0	6	6
Pink	3	4	7
Total	**5**	**14**	**19**

Table 5. The distribution indicating the third colours chosen by the students for women.

Variable	Sex		Total
	Male	Female	
Light pink	0	2	2
Red	1	1	2
Dark pink	1	1	2
Blue	0	1	1
Purple	1	3	4
Pink	2	3	5
Yellow	0	2	2
Orange	0	1	1
Total	**5**	**14**	**19**

When Table 5 is analysed, the third colours picked for women are found to be light pink, red, dark pink, blue, purple, yellow and orange. All three warm colours are observed in the preferences of female students while it is also seen that they picked two cold colours like blue and purple as well. The result of chi-square conducted for determining whether there is a significant difference or not between female and male students'. 3rd colour preference was calculated as 3.78 and this value was not found significant at 7 degree of freedom ($p<0.05$).

As it is seen from the Table 6, the 1st colour preferred by the students for men are found to be light blue, light green, brown, red, dark blue, blue, yellow and green. Three different shades of blue colour, which is a cold colour, are all picked. The result of chi-square was conducted in order to determine whether there is a significant difference or not between female and male students'. 1st colour preference was calculated as 4.99, and this value was not found significant at 7 degree of freedom ($p>0.05$).

As it is seen from the Table 7, the 2nd colours preferred by the students for men are found to be light blue, light green, gray, dark blue, brown, dark green, blue and green. For the first time the preferences included

Table 6. The distribution indicating the first colours chosen by the students for men.

Variable	Sex		Total
	Male	Female	
Light blue	1	3	4
Light green	1	0	1
Brown	0	2	2
Red	1	1	2
Dark blue	0	1	1
Blue	1	4	5
Yellow	0	1	1
Green	1	2	3
Total	5	14	19

Table 7. The distribution indicating the second colours chosen by the students for men.

Variable	Sex		Total
	Male	Female	
Light blue	2	1	3
Light green	0	1	1
Gray	1	3	4
Dark blue	0	1	1
Brown	1	1	2
Dark green	0	1	1
Blue	0	2	2
Green	1	4	5
Total	5	14	19

gray which is a neutral colour. The result of chi-square conducted in order to determine whether there is a significant difference or not between female and male students' 2nd colour preference was calculated as 4.99, and this value was not found significant at 7 degree of freedom ($p>0.05$).

As it is seen from Table 8, the 3rd colours preferred by the students for men are found to be light green, gray, brown, dark blue, blue and black. It is worth considering that the most preferred colour is black while the least preferred one is light green. In terms of the value of light, light green has the largest value and black is an opaque colour. According to these results, it is possible to claim that opaque colours were mostly picked by male students. Yet, Table 8 includes brown as the least preferred colour after light green. In this regard, the shade of brown colour may direct the preferences of male students. The result of chi-square conducted in order to determine whether there is a significant difference or not between female and male students' 3rd colour preference was calculated as 3.96, and this value was not found significant at 5 degree of freedom ($p>0.05$).

Table 8. The distribution indicating the third colours chosen by the students for men.

Variable	Sex		Total
	Male	Female	
Light green	0	1	1
Gray	1	3	4
Brown	0	2	2
Dark blue	1	2	3
Blue	0	3	3
Black	3	3	6
Total	5	14	19

DISCUSSION

In this study, the colour preferences of 5th grade students in relation to gender were determined. Although there were 24 different colours in front of the participants, the total number of colours picked for women and men is 16. The reason behind this are related with gender roles deriving from a traditional point of view and individuals interpreting certain values by making restrictions (Yağan, 2014).

It is also located that participants picked 10 different colours for women from 16 colours, and 11 different colours for men from 16 colours. 5 of those colours are associated both for women and men. Those common colours are red, blue, yellow, dark green and light green. According to Ertok (2014), three main colours, namely red, blue and yellow, are suitable for both sexes. Remaining two colours are two different shade values of green which is acquired with the mixture of yellow and blue, which are also main colours.

A consistent increase or decrease was observed in the 1st, 2nd and 3rd tiers of the preferences made for women and men. However, an inverse ratio was found in their interrelation. For women, 1st preference included 5 colours (red, dark pink, purple, pink and yellow), 2nd preference included 7 (light pink, light green, dark pink, dark green, blue, purple and pink) and 3rd preference included 8 (light pink, red, dark pink, blue, purple, pink, yellow and orange). There is an increase in the preferences of the students for women. For men, 1st preference included 9 colours (light blue, light green, brown, red, dark blue, blue, yellow, green), 2nd preference included 8 (light blue, light green, gray, dark blue, brown, dark green, blue and green) and 3rd preference included 6 (light green, gray, brown, dark blue, blue and black). There is also a decrease in the preferences of the students for men. While the colour preferences for women increase as 5, 7 and 8 colours according to the tiers, the colour preferences for men decreases as 9, 8 and 6 colours.

With the influence of the concept of gender, mostly preferred colours in the first tier by the 5th grade students as they consider it the colour of women are purple for

male students and pink for female students. Mostly preferred colours in the second tier are pink for male students and purple for female students, while mostly preferred colours in the third tier are again pink for male students and purple, and pink for female students. With the influence of the concept of gender, mostly preferred colours in the first tier by the 5th grade students as they consider it the colour of men are light blue, light green, red, blue and green for male students and blue for female students. Mostly preferred colours in the second tier are light blue for male students and green for female students, while mostly preferred colours in the third tier black for male students and gray, blue and black for female students.

Existing colour perceptions in relation to gender are blue for men and pink for women, colours of pink and blue became varied and new colours are also added. According to the results of this research, colour preferences of the participants in relation to gender are pink and purple for the colour of women; blue, light blue, green, light green, black, red and gray for the colour of men.

In the light of the results acquired in this study, it is recommended to apply this study among different age groups and different education institutions; to include gender courses in all faculties, especially in faculties of education; to analyse the attitudes-behaviours of the parents in relation to gender roles by raising their awareness about the concept of gender; and to conduct new studies by building upon the psychological ground of the results of this study; because, according to the Charter of United Nations, equality of men and women is a necessity and of vital importance for fundamental human rights, human dignity and value (Yazıcı and İzgi, 2014).

Conflict of Interests

The author has not declared any conflict of interests.

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