# THE EVALUATION OF SECONDARY SCHOOL STUDENTS' E-LEARNING INTERFACE DESIGN CHOICES

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## Abstract

The purpose of this research is to determine the educational software interface design choices of secondary school students and make suggestions for educational software designers. Computer Assisted Instruction (CAI) applications like e-learning have some limitations to meet the needs and individual preferences of students. It is also thought that the CAI implementations, which allow students to organize the learning environment according to their individual needs, are more qualified. In this context, a flexible / manageable interface system was developed in the research, giving students the opportunity to design an interface that is convenient and comfortable for them. The sample group of the study consisted of 322 students from the 5th, 6th, 7th and 8th grade students who were studying in the spring semester of 2017-2018 in the two secondary schools in the province of Çanakkale. When the interface selections of the students were examined, the participants mostly selected light and pastel background colors and dark and cold fore colors. It is preferred by menus students consisting of "oblique oval" buttons. Participants mostly preferred the menus, which consisted of the selected buttons, to be placed on top of the contents.

**Keywords:** Computer Aided Instruction, E-Learning, Interface Design

## ORTAOKUL ÖĞRENCİLERİNİN E-ÖĞRENME ARAYÜZ TASARIM SEÇİMLERİNİN DEĞERLENDİRİLMESİ

### Özet

Bu araştırmanın amacı, ortaokul öğrencilerinin eğitim yazılımı arayüz tasarımı seçimlerini belirleyerek eğitim yazılımı tasarımcıları için önerilerde bulunmaktır. E-Öğrenme gibi Bilgisayar Destekli Öğretim (BDÖ) uygulamalarının, öğrencilerin gereksinimlerini ve bireysel tercihlerini karşılamak için bazı sınırlıkları bulunmaktadır. Ayrıca, öğrencilerin bireysel ihtiyaçlarına göre öğrenme ortamını düzenlemelerini sağlayan BDÖ uygulamalarının daha nitelikli olduğu düşünülmektedir. Bu bağlamda, araştırmada esnek / yönetilebilir bir arayüz sistemi geliştirilerek öğrenciler kendileri için uygun ve rahat olan arayüz tasarımı yapma şansı verilmiştir. Araştırmanın örneklem grubunu Çanakkale ilinde bulunan iki ortaokulda 2017-2018 bahar döneminde öğrenimlerini sürdürmekte olan 5., 6., 7., ve 8. sınıf seviyelerinden 322 öğrenci oluşturmuştur. Öğrencilerin yaptıkları arayüz seçimleri incelendiği zaman, katılımcılar çoğunlukla açık ve pastel arka plan renkleri ve koyu ve soğuk yazı renkleri seçmişlerdir. "Eğik Oval" butonlardan oluşan menüler öğrenciler tarafından tercih edilmiştir. Katılımcılar çoğunlukla en butonlardan oluşan menülerin içeriğin üst kısmında yer almasını tercih etmişlerdir.

**Anahtar Kelimeler:** Bilgisayar Destekli Öğretim, E-Öğrenme, Arayüz Tasarımı

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## 1. INTRODUCTION

The learning is an individual process that occurs in the mind of the learner. Considering the process of training programs, new approaches are designed by using student-centered teaching (Uyangör ve Dikkartın, 2009). Rapid change of information requires the individuals to be learners constructing and learning their own informations. Creating student-centered learning environment is important in ensuring students to be lifelong learners by recognizing themselves (Gününç, Odabaşı, Kuzu, 2012). One of the most important goals of the student-centered teaching is providing the ability to explore their own learning style and type to the students (Çakallıoğlu, 2008: 24). To meet the needs of successful and efficient learning design, students should discover their strengths or weaknesses in creating own learning styles (Entwistle, 2013). Therefore, course materials and equipments should be designed to motivate students to learn in course design (Ally, 2004; Kutluca and Birgin, 2007). Course materials and tools should be organized demanding incentive and stimulus to learn. In other words, student centered learning should encourage cognitive and physical active participation of students by drawing attention to the learning activities during the learning process with the active construction (Michael, 2006; Özer, 2007). Therefore, the design of learning platforms should be controllable and changeable. The construction of the design by users may end up with an increase in their interest and motivation. Because in the successful learning environments, opportunities are given to students to make feel themselves comfortable and confident (Uludağ ve Odacı, 2002). Computer Aided Instruction offers superior facilities in supplying individualized learning environment and motivation. In this process, users should be able to control the presentation and interface design of content that provides effective visual elements (color, images, graphics, tables, etc..). In order to create a personalized accessibility, different forms of information should be presented/developed (Groissboeck, Lughofer and Thumfart, 2010; Knuth and Cunningham, 1993; Nielsen 1999). Moreover, making arrangements according to the different needs of the students in learning styles may improve their academic achivement (Sampson and Karagiannidis: 2002). Because, each student has a distinctive learning style which is the best way to learn (Ekici, 2003; Sünbül, 2004; Entwistle, 2013). For these reasons, interface plays an important role in the educational software environments.

One key aspect of both web sites as well as intranet sites that affects usability is navigation. Because of this designers need to take into account is the appearance of screen elements (Van Schaik & Ling, 2003). This may have an impact not only on aesthetic preferences of users, but also on task performance (Tractinsky, Katz, & Ikar, 2000). Indeed, screen aesthetics may have a significant impact upon whether a site will be used (Schenkman & Jönsson, 2000). Unfortunately, the graphical user interface design of web pages is usually fashion-driven with a main objective to attract attention of visitors and reflect a graphical image of organization. High legibility and readability are two important factors for effective acceptance of the presented information and are rarely treated as most important (Humar & Gradis, 2008). Using color is one of the important part of the e-learning platform's design.

Colours play an important role for customers in making decisions on what they like and dislike. They evoke various emotional feelings such as excitement, energy, and calmness. These feelings, evoked by either colours or colour combinations, are called colour emotions. Sometimes these are aesthetically pleasing and legible, but on the other hand they are only pleasing, and sometimes they are neither pleasing nor legible (Greco et al., 2008; Ou et al., 2004). Colour can be very effective in learning and educational setting, marketing, communication or even sport. For instance, a marketing study has found that colour can increase brand recognition by up to 80% (Dzulkifli & Mustafar, 2013). In addition, in the clinical setting, specific interventions involving colours can be introduced to deal with memory-related problems such as learning difficulty, autism, dyslexia, and others. By using colour in the intervention, it can help patients to follow and understand

the learning program better. Clinical intervention for patients with dyslexia using colour have been proven to be effective in reducing patient difficulties in reading (Wilkins, 2003).

There are many academic researches indicating importance of interface design. Hassan and Li (2005) has identified 57 criterias for the availability of the website. These criterias are grouped in 7 groups (screen appearance, content, accessibility, navigation, media usage, interaction and consistency). Also, people are expected to have fun and to enjoy with the softwares's aesthetic value through the practical experience of software (Bonnardel, Piolat and Bigot, 2011; Norman, 2004). The use of color is an important dimension in the aesthetic design. In light of the researches conducted in educational software design, it is important to take decisions related to the user's software interface design both aesthetically and in terms of interaction (Bilgiç, 2005; Çivril, Aruğaslan and Yakut, 2013; Kılıçer, Çoklar, Odabaşı, 2007). The colors used in the interface design of the software is one of the most important factor of design. The use of color is important terms for both readability and attention. There are domestic and foreign researches on educational software design which specify dark fore color usage on light background color (Altun, Ünal, Uysal, Göktaş, 1999; Bhattacharyya, Chowdhury, Chatterjee, Pal and Majumdar, 2014; Bonnardel et al.., 2011; Clariana, 2004; Hall and Hana, 2004; Hill, 1997; Shieh and Lin, 2000; Wu and Yuan, 2003). Another structure where users interact with the software are the visual aids (table, graph, picture etc.) which supports text content of software. One of the most influential factor in comprehension of written content of software are visual materials. Because, usage of visual material facilitates perception and learning and reduces forgetfulness (Yaşar, 2004; Pashler et al., 2007). As a result, the aim of this research is to find out the educational software interface design choices of university students and the differences in these choices related to personal characteristics of these students. Based on the findings of the research it is expected to give ideas of educational software interface design customization to the designers. In the literature review on interface design choices it is found out that in these researches participants had limited rights including choosing some background/fore color combinations (Altun and etc., 1999; Bhattacharyya and etc., 2014; Bonnardel and etc., 2011; Clariana, 2004; Hall and Hanna, 2004; Lin, 2003; Hill, 1997; Shieh and Lin, 2000). In this context, user control opportunities to change background/fore color and visual elements (table, graph, picture) of educational software are given in this research to provide to individualise. Because it is thought that giving opportunities to users for creating self designs may give opportunities to relax themselves better.

Within the scope of this research, it is aimed to determine the interface design choices of secondary students. In this framework, answers to the following research questions are sought.

• What are the secondary school students' background color choices?

• What are the secondary school students' text color choices?

• What are the secondary school students' font type choices?

• What are the secondary school students' button type choices?

• What are the secondary school students' button location choices?

## 2. METHODOLOGY

### a. Data Collecting Tools

As a descriptive research design, "the process of correlating model" was used in this study. The data were collected by particular and computer using experience questionaries and Educational

Software Interface Design Selection Program (ESIDSP). ESIDSP's reliability and structure validity were tested by Department of Computer Education and Instructional Technology academicians of Canakkale Onsekiz Mart University. ESIDSP was developed by using Adobe Animate program. Users had chances to make changes on education software interface design. In figure 1, background selection screen shot is shown. In this screen, users have opportunities to see the selection in fullscreen mode. In figure 2, color text color and font type selection screen shot is given. In this screen, users can select desired fonts and font colors from pop-up menus. At ESIDSP, users also have chances to change button type and location of the them in this software.
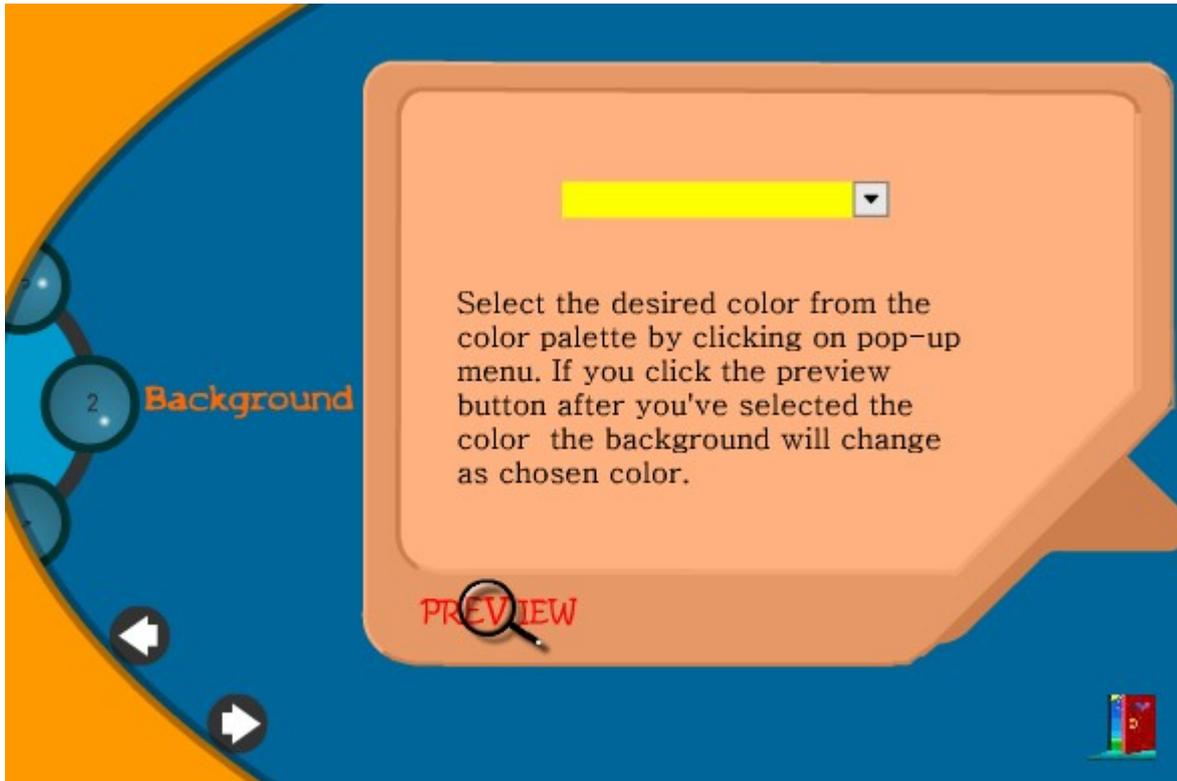


*Figure 1: Educational Software Interface Design Selection Program (ESIDSP) Background Color Selection Screenshot*
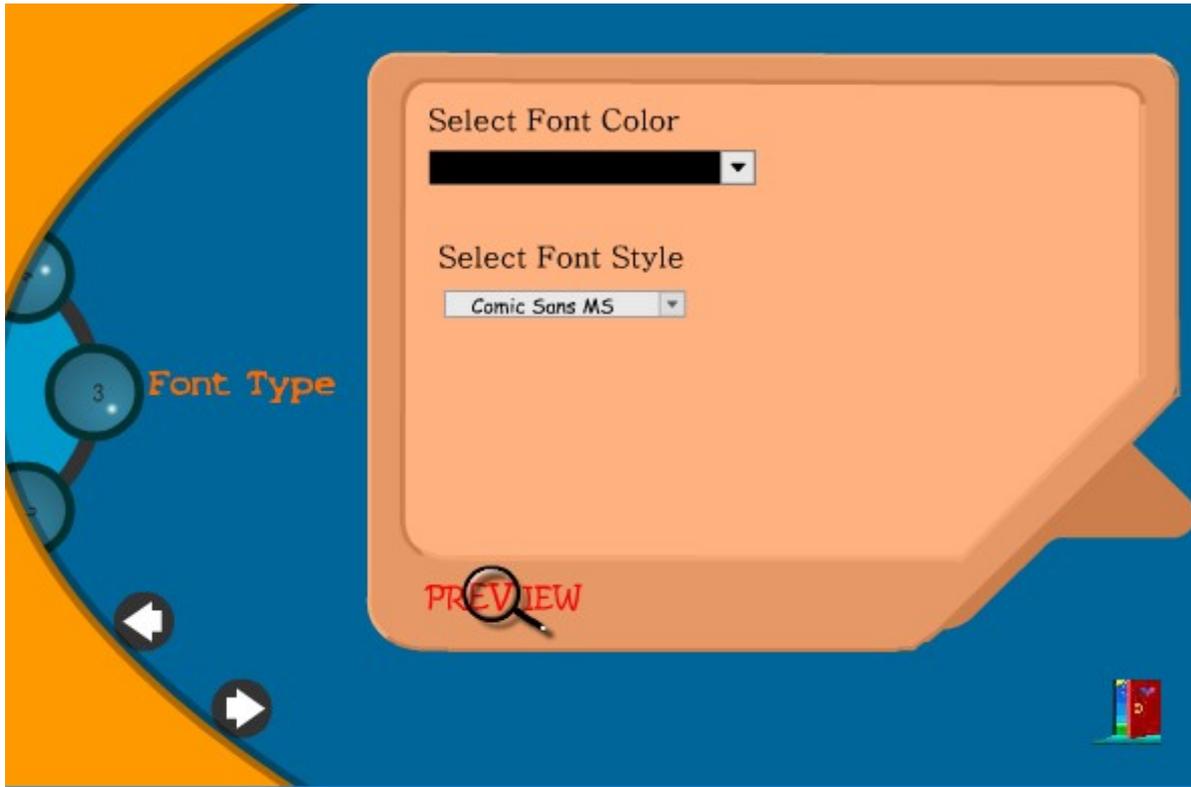
*Figure 2: ESIDSP Font Color and Font Style Selection  Screenshot*

In figure 3, button type selection screen, in figure 4 button/menu position selection secreen shots are shown.
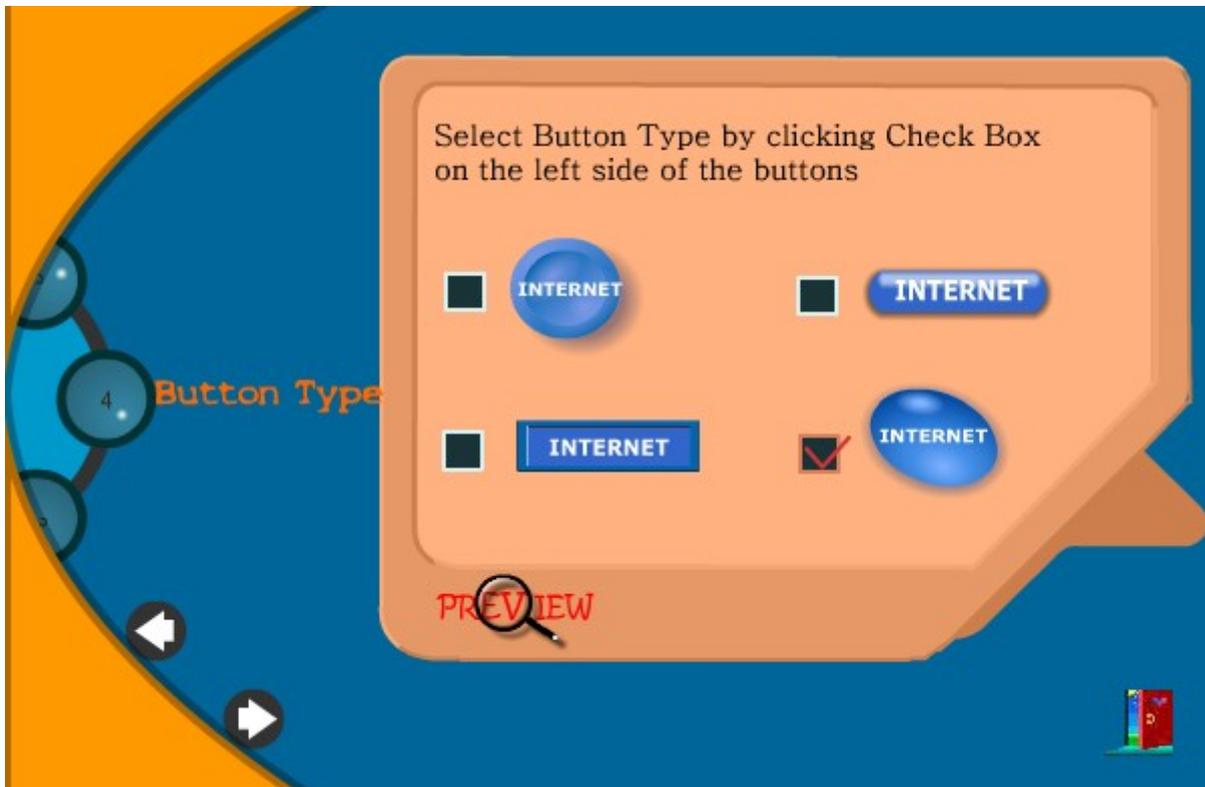


*Figure 3: ESIDSP Button Type Selection Screenshot*

In every stage users have opportunuties to see the effect of the interface design selection by using preview button. In figure 5, after button/menu position selection, the preview screenhot of software interface design choices is shown.
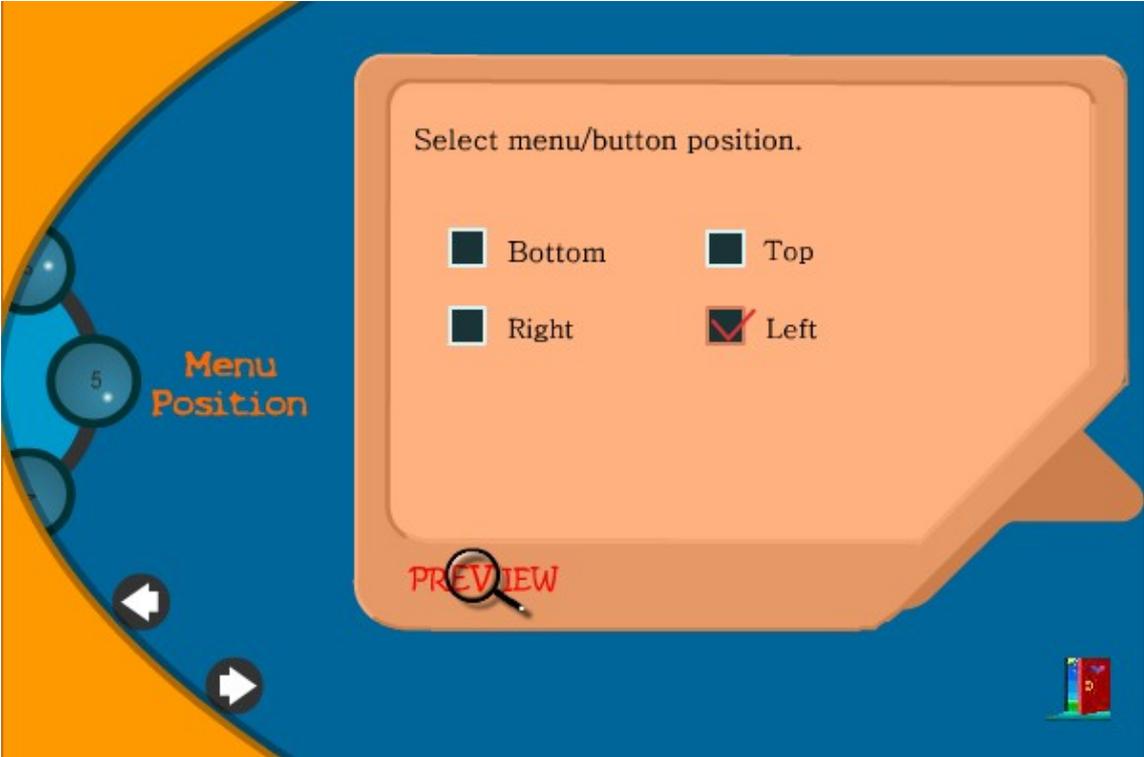


*Figure 4: ESIDSP Button/Menu Position Selection  Screenshot*
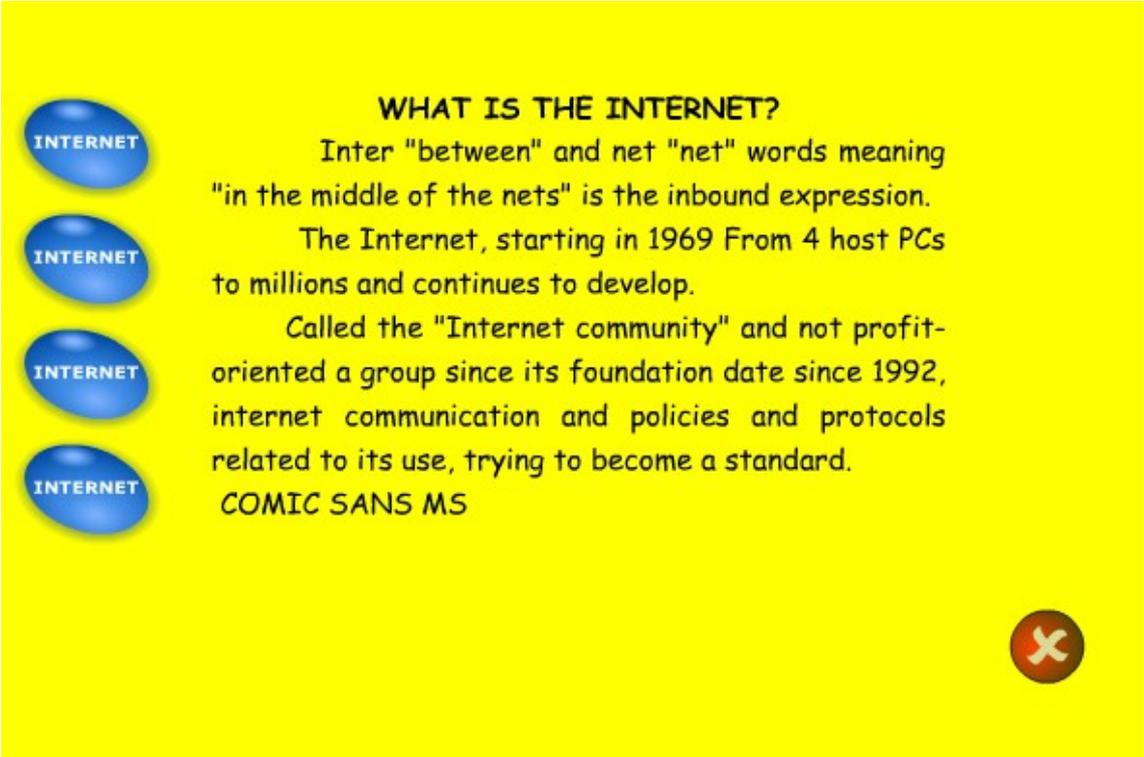


*Figure 5: ESIDSP Button/Menu Position Preview  Screenshot*

Software interface design choices which arranged according to preferences is shown at figure 6. In the process of Data collection, questionnaire was given to the participants' to determine interface design choices.



*Figure 6: ESIDSP Result Preview Screenshot of Chosen Interface Choices.*

### b. Working Group

The sample group of the study consisted of 322 students from the 5th, 6th, 7th and 8th grade students who were studying in the spring semester of 2017-2018 in the two secondary schools in the province of Çanakkale.

### c. Analysis of Data

The research was conducted with a descriptive model to describe the current situation. The dependent variables of the study are background, fore color, button type and button position selection of secondary school students. The students' preferences were analyzed using the SPSS 16.0 statistical analysis program.

## 3. FINDINGS

Participants' education software interface design choices are explained below by background/text color button type and button location result tables.

### 3.1. Educational Software Background Color Choices of Secondary School Students

Secondary school students' background color choices are explained in Table 1 by frequency and percentage values respectively. *Yellow* (14,60%), *orange* (11,49%), *green* (9,01%) and black

(9,01%) were mostly chosen background colors by participants as seen in Table 1. The least chosen background colors were *light gray* (1,24%), *light orange*(0,62%) and *light yellow* (0,62%). As a result, students chose *primary colors (yellow, green, red)* more than the others. Light color tones as light orange (0,62%), light yellow (0,62%), light gray (1,24%), light green (1,55%) were the least chosen colors by students. Participants' background color choices are similar to the research results of Burdurlu et al. (2006), Demir (2004), Demirci (2006). Demir (2004) found out that 7th grade students mostly chose blue, light blue, yellow, red and orange. These research results are similiar by this research.

**Table 1: Secondary School Students' Educational Sofware Background Color Choices Frequency and Percentage Values (Descending Sort).**

| Color | f | % |
|---|---|---|
| Yellow | 47 | 14,60 |
| Orange | 37 | 11,49 |
| Black | 29 | 9,01 |
| Green | 29 | 9,01 |
| Dark Blue | 26 | 8,07 |
| Pink (Fuchsia) | 22 | 6,83 |
| Red | 19 | 5,90 |
| Light Blue | 17 | 5,28 |
| Pistachio Green | 15 | 4,66 |
| White | 14 | 4,35 |
| Blue | 13 | 4,04 |
| Claret Red | 11 | 3,42 |
| Dark Gray | 9 | 2,80 |
| Sea Green | 8 | 2,48 |
| Light Pink | 7 | 2,17 |
| Turquoise | 6 | 1,86 |
| Light Green | 5 | 1,55 |
| Light Gray | 4 | 1,24 |
| Light Orange | 2 | 0,62 |
| Light Yellow | 2 | 0,62 |
| **Total** | **322** | **100** |

Participants mostly chose warm and dark colors as background colors. They rarely chose cold and light colors. Warm colors make text easier to read and bring them out the front to the background of software. *Gray* and its tones were the least chosen color group. Because, grey makes text less noticeable and difficult to read. Participants' gender may effect their background colors choices to be *pink* and *blue* color values.

## 3.2. Educational Software Text Color Choices of Secondary School Students

Secondary school students' text color choices are explained in Table 2 by frequency and percentage values respectively. *Black* (36,96%), *yellow* (11,80%), *red* (7,76%) and *orange* (7,45%) were mostly chosen text colors by participant as seen in Table 2. *Pink* and *White* were the other popular text colors. The least chosen text colors were *dark gray* (0,62%), *blue* (0,62%), *sea green* (0,31%). As a result, students mostly chose *dark colors* as text color. *Dark text* colors are easy readable and eye catching on light and pastel colors. Grey and its tones were the least chosen color

group. Because, *gray* is a hard readable color. In Table 1 and 2 it occurs that participants' background and text color choices are similar to the research result of Hill (1997), Demir (2004), and Altun et al. (1999). Hill (1997) alike found out *yellow*, *black* and *dark* text color choices. Braun et al. (1995), Altun et al. (1999), Shieh and Lin (2000), Demir (2004) found out black is the most noticeable and easy-readable color on background. Wu and Yuan (2003) had results that dark colors ease reading. In Appendix A, background and fore color selection crosstab results are shown. Black text color with green background (n=18), yellow background (n=17) and orange background (n=13) were most chosen color combinastions. Following these, orange text color with yellow background color (n=11) was chosen popular text color/background color combination. As a result, while users selected generally warm colors as background color, they selected cold colors like black as a background color.

***Table 2: Secondary School Students' Educational Sofware Text Color Choices Frequency and Percentage Values (Descending Sort).***

| Color | f | % |
|---|---|---|
| Black | 119 | 36,96 |
| Yellow | 38 | 11,80 |
| Red | 25 | 7,76 |
| Orange | 24 | 7,45 |
| White | 17 | 5,28 |
| Pink (Fuchsia) | 17 | 5,28 |
| Green | 13 | 4,04 |
| Pistachio Green | 13 | 4,04 |
| Dark Blue | 12 | 3,73 |
| Light Blue | 8 | 2,48 |
| Light Orange | 7 | 2,17 |
| Light Yellow | 5 | 1,55 |
| Light Green | 5 | 1,55 |
| Light Gray | 4 | 1,24 |
| Turquoise | 4 | 1,24 |
| Claret Red | 3 | 0,93 |
| Light Pink | 3 | 0,93 |
| Dark Gray | 2 | 0,62 |
| Blue | 2 | 0,62 |
| Sea Green | 1 | 0,31 |
| **Total** | **322** | **100,00** |

### 3.3. Educational Software Font Type Choices of Secondary School Students

Secondary school students' font style choices are explained in Table 3 by frequency and percentage values. 36,02% of participants chose *"Comic Sans MS"* as the most preferred font style. Arial (14,91%) and Calligraphy (10,56%) were the other chosen font styles. Coruier New Tur (0,31%)*, Sylfaen (0,31%), Poor Richard* (0,31%) were the least chosen font style by the participants. *"Comic Sans MS"* font style is similar to handwriting. So, it may be chosen mostly. Bernard et al. (2001), similarly found out "Comic Sans MS" and "Arial" were mostly preferred font styles.

***Table 3. Secondary School Students' Educational Sofware Font Style Choices Frequency and Percentage Values (Descending Sort).***

| Font Type | f | % |
|---|---|---|
| Comic Sans MS | 116 | 36,02 |

| | | |
|---|---|---|
| Arial | 48 | 14,91 |
| Calligraphy | 34 | 10,56 |
| Century | 17 | 5,28 |
| Monotype Corsiva | 15 | 4,66 |
| Georgia | 13 | 4,04 |
| Century Gothic | 9 | 2,80 |
| Arial Unicode MS | 9 | 2,80 |
| Impact | 8 | 2,48 |
| Times New Roman | 7 | 2,17 |
| Franklic Gothic Medium | 7 | 2,17 |
| Book Antiqua | 7 | 2,17 |
| Batang | 6 | 1,86 |
| Garamond | 4 | 1,24 |
| Verdana | 4 | 1,24 |
| Bookman Old Style | 4 | 1,24 |
| Perpetua | 3 | 0,93 |
| Tahoma | 3 | 0,93 |
| Papyrus | 3 | 0,93 |
| Trebuchet MS | 2 | 0,62 |
| Poor Richard | 1 | 0,31 |
| Sylfaen | 1 | 0,31 |
| Coruier New Tur | 1 | 0,31 |
| **Total** | **322** | **100,00** |

### 3.4. Educational Software Button Type Choices of Secondary School Students

Secondary school students' button type choices are explained in Table 4 by frequency and percentage values. 48,1% of participants chose "*Curved Oval*" button style. *"Circle"* (27%) and *"Pill"* (16,5%) were the other button types. "*Rectangular*" (8,4%) was the least chosen button type by the participants.

*Table 4. Secondary School Students' Educational Sofware Button Type Choices Frequency and Percentage Values (Descending Sort).*

| ButtonType | f | % |
|---|---|---|
| Oblique Oval | 155 | 48,1 |
| Circle | 87 | 27,0 |
| Pill | 53 | 16,5 |
| Rectangular | 27 | 8,4 |
| **Total** | **322** | **100,00** |

### 3.5. Educational Software Button Location Choices of Secondary School Students

Secondary school students' button location choices are explained in Table 5 by frequency and percentage values. 40,1% of participants chose "*Top*" location. *"Right"* (23%) and *"Bottom"* (19,9%) were the other button locations. "*Left*" (17,1%) was the least chosen button location by the

participants. Similarly, Bernard and Hamblin (2003) found out horizantal menus on top location preferred by users.

*Table 5. Secondary School Students' Educational Sofware Button Location Choices Frequency and Percentage Values (Descending Sort).*

| Button Type | f | % |
|:---:|:---:|:---:|
| Top | 129 | 40,1 |
| Right | 74 | 23,0 |
| Bottom | 64 | 19,9 |
| Left | 55 | 17,1 |
| **Total** | **322** | **100,00** |

## 4. DISCUSSION AND CONCLUSION

It is found out that secondary school students had different color button choices. Participants chose color combinastions that are creating positive contrast (dark background/light text color). Students text/background color choices verified research results (Hill, 1997; Braun et al., 1995: 179; Wu and Yuan, 2003: 617; Hall and Hanna, 2004, Shieh and Lin, 2000; Lin, 2003: 65-72). They chose color combinastions creating positive contrast and easing reading. Students chose "Comic Sans MS" and "Arial" font styles which are easy to read and notice (Bernard et al., 2001). Students mostly chose top location for buttons. Up location is more useful for users (Bernard and Hamblin, 2003).

Greco et al. (2008) found that the best polarity in terms of legibility for both computer-displayed slides and projected slides is dark text on a light background, with black and dark blue being the most legible and pleasant text colors. Luminance contrast plays a fundamental role in the legibility and pleasantness of a text displayed on a monitor. Dark text on a light background is better than the inverse combination. Among the combinations of dark text and light background, the best legibility is obtained with black or blue texts Among the combinations of light text on a dark background, green, brown, black, and blue are the best background colors, whereas red is the worst. The best choice for the text is white. Dark texts on light backgrounds are more pleasant than the inverse combination.

Humar & Gradis (2008) in their research got the results shows that the best results were achieved with yellow on black, cyan on black, white on blue, black on yellow, white on black, and green on black color combinations. On the other hand, the results for the color pairs of black and blue, red and magenta, green and cyan, and yellow and white were relatively low.

As a result, users of educational softwares have different software design choices. So, designers should avoid from designs which shows their own color and design selections. They should create designs which are in accordance with computer assisted instruction. Because interface is one of the most important structure that makes software user-friendly (Atasoy, 2004: 31). In addition, the reading text of education softwares which are supported by visual aids as video, animation, graphic etc. and audio will be more successful education software designs. Because different changement opportunities at software affect student motivation on positive direction ( Mayer, 2005; Özdener and Erdoğan, 2001). In order to ensure personalization, software customization screens can be achieved by choosing colors in the color palette (Troiano ve Birtolo: 2014). In addition, the reading text of education softwares which are supported by changeable visual aids is thought to be successful education software designs. This management control may give users a chance to select suitable design and visual aids for themselves. Design control level may change up to the computer and

education software experience. For example, secondary school students or inexperienced computer/education software users may only have rights to change text and background color. Experienced users may have opportunities to change interface design and learning materials.

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**Background * Fore Color Crosstabulation**

Count

| Background \ Fore Color | Black | Dark Gray | Light Gray | White | Orange | Light Orange | Yellow | Light Yellow | Green | Sea Green | Pistachio Green | Light Green | Dark Blue | Blue | Light Blue | Turquoise | Red | Claret Red | Pink (Fuchsia) | Light Pink | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Black | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 12 | 0 | 2 | 0 | 29 |
| Dark Gray | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 |
| Light Gray | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| White | 9 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 6 | 0 | 4 | 1 | 0 | 0 | 14 |
| Orange | 13 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 37 |
| Light Orange | 1 | 0 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Yellow | 17 | 1 | 1 | 1 | 11 | 2 | 7 | 2 | 1 | 0 | 1 | 0 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 0 | 47 |
| Light Yellow | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Green | 18 | 0 | 0 | 1 | 2 | 1 | 6 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 5 | 0 | 29 |
| Sea Green | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 8 |
| Pistachio Green | 5 | 0 | 0 | 0 | 3 | 3 | 0 | 1 | 1 | 0 | 0 | 1 | 4 | 1 | 1 | 2 | 5 | 1 | 1 | 0 | 15 |
| Light Green | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Dark Blue | 10 | 0 | 0 | 1 | 1 | 0 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 13 |
| Blue | 7 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 17 |
| Light Blue | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 26 |
| Turquoise | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Red | 7 | 0 | 0 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 19 |
| Claret Red | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 2 | 11 |
| Pink (Fuchsia) | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 1 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 22 |
| Light Pink | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 7 |
| **Total** | 119 | 2 | 4 | 17 | 24 | 7 | 38 | 5 | 13 | 1 | 13 | 5 | 12 | 2 | 8 | 4 | 25 | 3 | 17 | 3 | 322 |