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# Typographic properties of online learning environments for adults

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**Abstract:**

The effective use of computer and Internet technologies in every field of daily life has caused learning to take a broad part in these environments. Nowadays, a great deal of educational institution, non-governmental organizations or any organizations dealing with education and training has carried on their educational activities directly or indirectly through online learning environments (OLEs). But at this point, the institutions and organizations who try to present the educational content to their target group throughout the OLEs are supposed to pay attention to the design of these environments. Every component in the OLEs has to be developed and integrated appropriate to the properties, requirements and perception levels of the target group. Being as an important component of a visual design, typography is generally ignored by the designers in the development process of an OLE. The purpose of this descriptive study which is prepared with reviewing literature is to determine appropriate typographic properties that an OLE for adults has to have and give some typographic design suggestions.

*Keywords:* Typography; online learning environment; visual design.

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**1. Introduction**

The development and the proliferation of the computer technologies have led the learning environments to be integrated into the computer technologies and virtualized. Individuals have the chance to receive education through interacting with the content presented in these online learning environments (OLEs). But at this very point, the design of these OLEs importantly matters. Along with the content, the design which attracts the individuals' attention based on the perception principles has a very important role in individuals' efficient and productive learning. Perception principles deals with lots of properties like color, chart layout, use of frames, typeface, etc... Among these principles, typographical properties have an essential place. Typography is defined as the art of placing the types on a two-dimensional surface (Pektaş, 2001). The term typography is of importance because it lets the information be transferred from the virtual learning environments to the students in a very understandable way so that the students can learn more effectively.

In this study, typographical properties which are text-based properties among all the design components of an OLE will be examined. The purpose of this study is to determine the appropriate typographic properties of OLEs for providing the intended information to the individuals in a better effective way.

## 2. Online Learning Environments

In order to talk about an OLE, the term “learning environment (LE)” should be defined primarily. A LE can be defined as a place where individuals can use and benefit from the resources to make sense out of things and construct meaningful information (Beasley & Smyth, 2004). A well-developed LE enables students to foster their long-term understanding through the content and the contexts presented in the environment and through the interactions with peers and tutors (Jonassen, 1999). The properties of a LE are listed below by Dillenbourg, Schneider & Synteta (2002).

- A LE is a planned information area.
- A LE is a social area where instructional interactions occur.
- The information and the social areas in a LE have to be presented explicitly. To ensure that, lots of different design elements like texts, pictures, 3D animations can be used.
- The students in a LE play an active role in reconstructing the environment.
- LEs use varied technologies and educational approaches together.
- A LE is generally designed as an overlapping version of the physical environments.

In the light of the properties and the definition of LE, an OLE can be defined as a distinct, pedagogically meaningful and comprehensive synchronous or asynchronous environment by which learners and faculty can participate in the learning and instructional process at anytime and anyplace without having any obligation of being physically together. OLEs manifest a variety of technical tools that support instructional delivery and communication in online formats. In addition, dynamic delivery structures are embedded to enhance the instructional, learning and communication processes taking place (Dringus and Terrell, 1999). These environments foster learning when they are designed by taking the instructional design principles into consideration, when they are appropriate to the needs of the target group and when they include almost every activity that is used in the classroom. Hence, OLEs should not be limited with just the distance education applications. They can be used in order to enrich the classroom activities. In this context, typography as a design component of an OLE is planned to discuss.

## 3. Typography and Typographical Properties in Online Learning Environments

Literally, typography is the science of writing. Pektaş (2001) defines typography as an art of placing the typefaces onto the two-dimensional surface. On the other hand, Sarıkavak (2004) takes the definition more broadly and defines typography both as a visual, operational and aesthetic disposal of the letters and the other components related to literary-visual communication; and as a design language made up with these components. In this on-going digital era, typography is used within a wide framework that includes the electronic signs such as verbal-numeral information exchange, video, communication devices, computer screens. (Meggs, 1989). The use of typography in these digital environments mentioned above brings out “digital typography” term that combines usual print typography and typography in computer sciences (Andre & Hersch, 1992). The term typography which is being used in this study refers to digital typography.

The role in the layout, the location, the color, style and the relations with the other design components of typography gives communicative meanings to the design (Selamet, 1996). The proper use of these properties belonging to typography enables the intended message transfer to the user in an efficient way. These properties also can give the reader cues to what the text contains. Appropriate typography helps to decrease the time consumed and the effort required to access, comprehend and use information. For example, İstek (2005) indicated that every typeface has an own character and if this character is not suited to the message that is intended to be given to the user, there can occur so many misunderstandings.

The term “font” includes all the features of the text such as the font character, style and size. Font characters came up with the changing the thickness and shapes of the letters. Every font character has an unique feature and effect on the design. (İstek, 2005). Some font characters leave sincere impressions, while some others leave serious,

cheery or historical impressions. Therefore, choosing the appropriate typeface, which will be used in OLEs, to the intended content, is very important in terms of transferring the message with a proper meaning. By the way, readability is also very important for choosing the typeface for the learning environments. It is needed that the typeface should be chosen perceivable. Meanwhile, some typefaces are much more readable than the others. For example, serif fonts are more readable than the sans serif fonts on computer screens. (Geske, 1996; Bradshaw, 2000; Chandler, 2001; Erdoğan 2008).

In some cases, designers may want to add some diversity and mobility properties into the design with using different fonts within the same environment. However, what to be careful in here is not to use two or more different typefaces coming from different font families (such as serif fonts, sans serif fonts,...) in the screen-oriented environments like OLEs; which produces some difficulties in users' perceptions. For this reason, instead of using two or more different typefaces, the variations of bold, italic and light types of a same character can be used to give variety. (Burger, 1993).

Basic measure of a letter (point) is a name that is denominated for the spacing between the very top part of the letter and the very bottom part of the letter. Since this feature varies from a typeface to typeface, even the measure of the letter is chosen the same, every different typeface will be displayed differently on the computer screen. The quantity of a point used in the design differs from the channel that the design will be published. For example, in the printed materials small points can be read comfortably, while on the computer screen bigger points, ideally 12 points, can be suited for a better readability (Chandler, 2001).

Color feature is a very important element in terms of visual design. Thanks to the color and tonal adjustments, the design component can be came up or hidden. For this reason, issues relating to the color and color tones should be analyzed carefully and used appropriately. The misuse of color feature in the design confronts a problem about transferring the intended message to the target group and causes misunderstandings. For instance, while the hot and bright colors are preferred in the OLEs designed for children, the cold and matt colors are predominantly preferred for adults.

In terms of typography, color feature plays an important role such as bringing the intended message out, putting the emphasized-words used in text forward, enhancing readability and drawing attention the message which is intended to be transferred latently.

Another feature that effects the appropriate typography is the arrangements of spacing. Spacing determines the plenitude, the relations between and the perceptibility of the components used in the visual design. Spacings should be configured for visualizing the relations between the design components, enhancing the perceptibility without separating the components from each other and providing the integrity. Spacing can be examined with three titles; letter spacing, word spacing and line spacing.

Letter spacing is a term that mentions the gap between letters. Sarıkavak (2004) indicates that by arranging the letter spacing, readability can be increased. Word spacing is a terminological name of the gap which is between the end of a word and the beginning of a new word. The subject that should be paid attention is not to give too much or too little gap between two words. If there left more than enough gaps between two words, relating these two words will become hard for the user; or if there left less than enough gaps between two words, perception of these two words will again become hard for the user.

In Sarıkavak (2004)'s book named as "Fundamentals of Modern Typography", he mentioned a de facto rule about between words spacing. According to the book, if the words are written with uppercase, there has to be a gap which is at most like an "O" or at least like an "E" between the words. The same rule works for the lowercases as well, but it in this case, there has to be a gap which is at most like an "o" or at least like an "e".

Line spacing is a value in points that explains the distance between baseline of the upper line and the baseline of the lower line, when there are more than one line in a text. Narrower or too wide gaps between the lines are

conditions that effect legibility. If the line gap is much narrower than it has to be, then the eye will have difficulty in following the line and this is because the legibility will reduce. On the other hand, if the line gap is much wider than it has to be, then the relation breaks off and the habituation of the eye reading from left to right will be destroyed (İstek, 2005).

Considering that the main purpose of typography is to convey the message wanted to be transferred to the user in a more efficient and faster way, we can say that the readability is one of the most important criteria that effect the achievement of typography. Readability is a factor that is impressed by the font size, the color and all other criteria mentioned above. (Walker, 1992; Wilkins, 1995; Yurdakul, 2004). Readability is also impressed by where the text is published. For instance, the typeface used in printed material differs from the typeface used in the computer screen. Sans serif characters are much more readable than the serif characters on the computer screen (Erdoğan, 2008).

#### 4. Results

The content, expressions, activities, graphics, pictures, texts; that is, every component which will be used in an OLE have to be designed according to the developmental characteristics, the level of perceptions and the needs of the target audience (Yurdakul, 2004). One of the most important features in designing these kinds of environments is the typographical properties. Appropriate use of typographical properties plays an important role in transferring the content efficiently to the users. The typographical properties designed considering the users' perceptions, needs and target audience's properties contribute the content to be read more comfortably and faster.

In this study, the terms "OLE and typography" were defined briefly and based on these definitions, some suggestions were made about how to use typography in OLEs. When investigating the literature, no studies were ran across which is dealing with typography in OLEs directly. For further studies, researchers can conduct a study with gathering data from the users of OLEs about this topic and after analyzing the data, OLEs can be restructured based on the findings of that study.

#### Reference

- Andre, J. & Hersch, R. D. (1992). Teaching digital typography. *Electronic Publishing*, 5(2), 79 – 89.
- Bradshaw, A. (2000). *Maximizing visual learning*. Ames, IA: International Visual Literacy Association.
- Beasley, N. & Symth, K. (2004). Expected and actual student use of an online learning environment: A critical analysis. *Electronic Journal of e-Learning*, 2(1), 43-50.
- Burger, J. (1993). *Desktop multimedia bible*. New York: Addison-Wesley Publishing Company.
- Chandler, S. B. (2001). *Comparing the legibility and comprehension of type size, font selection and rendering technology of onscreen type*, Faculty of the Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
- Dillenbourg, P., Schneider, D.K., & Synteta, P. (2002). Virtual learning environments. In A. Dimitracopoulou (Ed). *Proceedings of 3rd Hellenic Conference "Information & Communication Technologies in Education"*, 3-18.
- Dringus, L. P., & Terrell, S. (1999). The framework for DIRECTED online learning environments. *The Internet and Higher Education*, 2(1), 55-67.
- Erdoğan, Y. (2008). Legibility of Websites which are designed for instructional purposes. *World Applied Sciences Journal*, 3 (1), 73-78.
- Geske, J. (1996). *A comparison of three type faces for use as body copy in computer mediated communication*. Unpublished manuscript, University of Iowa: Ames, IA.
- Hughes L., E. & Wilkins, A. J. (2000). Typography in children's reading schemes may be suboptimal: Evidence from measures of reading rate. *Journal of Research in Reading*, 23(3), 314 – 324.
- İner, B. (2007, June). Öğrenme yönetim sisteminin (Moodle) örgün öğretim laboratuvar uygulamalarında kullanılması. Paper presented at the *Ulusal Teknik Eğitim, Mühendislik ve Eğitim Bilimleri Genç Araştırmacılar Sempozyumu (UMES 2007) Kocaeli, Turkey*.
- İstek, R. (2005). *Görsel iletişimde tipografi ve sayfa düzeni*. İstanbul: Pusula.
- Jonassen, D. H. (1999). Designing constructivist learning environments. In C. M. Reigeluth (Ed.), *Instructional design theories and models: A new paradigm of instructional theory*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Meggs, P.B. (1989). *Type image*. New York: Van Nostrand Reinhold.
- Pektaş, H. (2001). İnternette görsel kirlenme. *TÜBİTAK Bilim ve Teknik Dergisi*, 400, 72-75.
- Sarıkavak, N. K. (2004). *Çağdaş tipografinin temelleri*. Ankara: Seçkin Yayıncılık.
- Selamet, S. (1996). Tipografi üzerine, *Anadolu Sanat*, 5, 173-181

- Walker, S. (1992). *How it looks: A teacher's guide to typography in children's reading books*. Berks: The Reading and Language Information Centre of the University of Reading.
- Wilkins, A. J. (1995). *Visual stress*. London: Oxford University Press.
- Yurdakul, İ. (2004). Eğitim ortamında etkileşimli çokluortam Cd-Rom'larının değerlendirilmesi. *The Turkish Online Journal of Educational Technology*, 3(4), 98-101.