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Statistical reasoning of impact of infographics on education

Fezile Ozdamlı[a], Senay Kocakoyun[a*],Turker Sahin[a], Sahin Akdag[a]

[a]*Near East University, Computer Education and Instructional Technology (CEIT) Department, Lefkoşa – Northern Cyprus*

Abstract

The aim of this study is to determine students' views about infographics prepared for anatomy lesson. A case study, which is one of the qualitative research method, was used as a model. The participants were the registered students for the anatomy course of the Physical Education and Sports Department (PES) at Near East University. During a six weeks educational period, the study was applied with the participation of 140 students. As a preparation, students have been informed about infographics before the study. Then, the infographics about digestive anatomy was presented to the students under the anatomy course curriculum. At the end of the course presentation, a semi-structured interview form was delivered in order to get students' opinions about infographic and "infographical anatomy" during the course. More than half of the students (n = 74) in the study stated that they did not know the meaning of the word "infographic", and also much more students (n = 84) stated that they had never seen infographics prior to this study. In the end of the study, the students think that more effective visuals are used by infographics instead of traditional course visuals. They also think that the subject of infographics in general is more understandable and more satisfactory. Moreover, since infographics are easier to remain in the minds, they are much more effective. This study has revealed the presentation by infographics can be used in many other courses. By this research, it can be claimed that infographics are not only more effective but also more permanent in the minds. This teaching method can transmit information to the increasingly widespread use, and thus, the conventional form of lectures might be possible to transform towards easy understandable courses having much more infographics.

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Keywords: Infographics; information visualization; infographical anatomy; teaching technology.

* Senay Kocakoyun, Tel.: +90-392-2236464/378; fax: +90-392-6802023

E-mail address: senay.kocakoyun@neu.edu.tr, fezile.ozdamli@neu.edu.tr, sahin.akdag@neu.edu.tr, turker.sahin@neu.edu.tr

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1. Introduction

Very significant and rapid developments in technology in the information age that we live in has forced us to change not only teaching and learning materials but also learning environment. This improvement and growth of information technology required new approaches used in education for students and teachers. The new situation really forced educators and instructors for reshaping of the methods and techniques used in the academic environment.

Depending on above developments, beyond the skills like ability to use technological tools, understand and remember the knowledge, today we also expect that students should have some new abilities such as accessing information, configuration knowledge, active participation in class, creative and critical thinking, interpretation what he/she sees, creating different materials and using ability of them for the course.

We know that material selection according to the student's feature is also an issue of interest to instructional technology. To be used for educational purposes, the selection of appropriate materials is very important. Due to the rapid increase of information, instructional technology interests in not only "How to be taught?" question but also the questions of "Without losing too much time, how to be taught the skills and knowledge required to be transferred?", "What resources are available for this purpose in the course?", "How can we enrich learning environments?", "How can we give learning skills to the students?", and "What materials can increase student motivation?". In other words, the whole essence of these questions is what materials and how they will be transferred effectively to the students. At the same time, however, it is expected that the student should be a high level of visual literacy, and his/her communication must be strong enough to understand symbols and text effectively[7]. Based on continuity effect of visual information on learning, information can also be transferred students in different ways such as a configured presentation method supported visual materials or providing configured materials to be used effectively by students.

Visualization that is supporting by visuals is one of the most frequently used method in the teaching-learning process. By visualization, students get an opportunity to make visible their idea, to think on the meaning established, to organize its own thinking process[2]. Or in other words, visualization of information is a a method that allows it to become more visible and create meaning in student's mind. Thus, student can configure, organize and edit information in this process. By this method, information can be used by many people and increase its accessibility[5]. Students can get negotiable and manageable information by information visualization. Main purpose is not to give just a graphical map data but to transfer required actual knowledge, to keep in mind or make it more easily remembered.

In order to visualize many tools are used such as concept maps, graphic organizers, flow diagrams, simulations, pictograms etc[7]. Borkin et al studied on visualization types and relationship with memory level. They claimed that visuals containing pictogram may be remembered better than other visual means and moreover infographics are the highest level recalling type of visual means[1].

Infographic can be seen as an extremely useful material for information transfer that can be used for transferring of complex or high amounts of information. Especially in the long text, important figures and important numerical data may be overlooked. For this reason infografics will provide to be noticed of those data. That is long and complex information transform to simpler and understandable knowledge. This pecularity makes it significant presentation instrument not only in education but also in every field in the life. Nowadays in digital technology, information and visuals continuously and rapidly growing both in academic platforms and social media. Thus the influx of information makes infographics much more significant.

Infographics are also transferring complex information effectively of the economical data by visual analysis[8], and also support the improvement of students[3]. Learning by using infographics, provide a lot of data as a whole structure for individuals and thus, they create scheme in minds[9,6]. In other words, they are carried out in a clear and visual presentation of complex data quickly. This data visualization is also called information architecture or information graphics[4,11]. In terms of graphic design infographic "information design" and to meet the needs of the target audience, message analysis, planning, presentation covers and understanding[10].

The most distinguishing feature of infographics from other types of visualization, no matter how intense and complicated to understand the requested information to be transmitted, is to provide a layout of this information and to teach it in the simplest form. Infographics are significant tools for learning because they include the design