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IS PREZI MORE USEFULLNESS EDUCATION TOOL THAN POWERPOINT?

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ABSTRACT: Using presentation software to support lectures and presentations has become ubiquitous in the whole vertical of education. The most applied presentation in our area is PowerPoint, but Prezi made a free-flowing presentation to give the effect of zooming. The Prezi application is combining creative thinking with facilities of modern technology, which leads to an interactive and highly customised presentation, structured approximately like a mind map. For education purposes, Prezi presentations are available free of charge. However, in our area, only a few students and teachers use Prezi presentation. They do not use it because they are familiar with PowerPoint presentation or they do not know the Prezi presentation.
Some significant differences in learning outcomes, self-efficacy, cognitive load and motivational variables between PowerPoint and Prezi presentation are presented in this paper. This paper also shows advantages and disadvantages of Prezi and PowerPoint presentations.

Key words: Concept map, education, powerpoint, presentations, Prezi

INTRODUCTION

Multimedia materials are frequently used for learning and teaching in 21st century classrooms. With the use of technological tools particularly such as projector, presentation, video and Internet in education in the recent years, visual education has become popular (Vecdi Can et al., 2012). A computer-aided presentation, defined as PowerPoint, is a method of display that supports lecturing (Sugahara & Boland, 2006). PowerPoint presentations were brought to the classroom environment at every stage of education and instruction from the elementary education to graduate education and the lessons gained an interactive structure. A defining attribute of PowerPoint and like different software packages (e.g., Xerte, Apple Keynote, VoiceThread, Libre Office Impress, Google Docs, SlideRocket or Prezi) is the slide show metaphor that undergirds its design and operation. The metaphor of a "virtual slide projector" is clearly visible in the use of today's PowerPoint software. The program allows the user to design and layout content within the boundaries of individual slides, arrange these slides in the desired order, and then display each slide in sequence to an audience during a live presentation. The slide show metaphor that underlies the use of PowerPoint is itself neither good nor bad, but it does have certain characteristics that a knowledgeable information designer should understand. Prezi, on the other hand, is a relative newcomer (it was released to the public in April, 2009) to the presentation software scene and is unique in its rejection of the slide show metaphor in favor of the "infinite canvas" and zooming user interface. Prezi is certainly not the first computer software to employ the infinite canvas or the zooming user interface but it is the first in the category of presentation software to make use of these metaphors. Instead of a series of slides upon which content is laid out, Prezi offers the presentation designer an "infinite canvas," a virtually endless two-dimensional space navigated by a zooming user interface. Visual aids (e.g., words, pictures, YouTube video clips) can be arranged anywhere on the canvas in practically any size, orientation, or spatial arrangement imaginable. The zooming user interface makes use of a simultaneous "pan and zoom" effect along a third dimension (the z axis), creating a sense of movement as the presenter moves across the canvas during his presentation (Bean, 2012). Prezi is an interesting alternative to the PowerPoint presentation with introduces an innovative style.

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Advantages and disadvantages of PowerPoint in Prezi presentations

The effectiveness of lectures with presentation may depend on the design of presentations slides as well as tasks and individual differences. Beside individual lecture differences programs also have different possibility of use and their own unique characteristics. There are many useful categories with which these characteristic can be explored. With the Venn´s diagram are represented advantages of PowerPoint and Prezi presentation (Table 1) and in Table 2 are represented disadvantages of PowerPoint and Prezi presentation.

Table 1. Venn's Diagram of Advantages of PowerPoint and Prezi Presentation

PowerPoint	Common characteristics	Prezi
- most well-known presentation making program - allows the fast data transfer to the other Microsoft Office applications - offers the possibility to compress audio and video clips - Microsoft PowerPoint Mobile allows presentations to be viewed on telephone, as well - limitlessly time of auto-play a single animation or slide - elements can be made to appear immediately as if rendered from thin air, or to ″fly in″ using various types of computer animation and different speeds of movement	- user-friendly interface - easy to use - allows introducing various graphical elements by using the drawing bar, images in clipart format, pictures, effects on text and imagines, music files and videos - allows presentations for offline use - user has a series of tutorial movies available and the online manual to learn how to use the application - allows presentations between slides - ability for a presenter to display a slide with ″hidden″ elements	- application is free of charge - it can be made by creating a simple user account (it is accessible) - provides the opportunity to create spectacular presentation - presentation is dynamic and attractive - has an attractive aspect - zooming user interface - able to create mind-map - values the ideas and stimulates the creativity of the one preparing it - helps delivering a more fluent demonstration - able to place the visual elements of the presentation in the most sensible location - presentation designer is free to use position and proximity to visually explain the physical, logical and hierarchical relationships among elements - does not require an external software, since all commands are available in the application interface - there is a total storage space of 100 MB - besides adding text and frames, the creator can draw freely, draw lines or arrows or highlight already pre-existing testes - possibility to use a site paying account, where the offer for making the presentations is diversified and improved - Prezi site has an already made presentation library where we can learn from and choose the most innovative examples

A PowerPoint presentation is a complex mixture of text, graphics, explanations, advanced software and real-time interaction with the audience. Traditional presentation software like PowerPoint is requires preparing a linear story line using a storyboard approach (Figure 1). Prezi allows for both a linear and a free-flowing presentation of a story line (Figure 2).

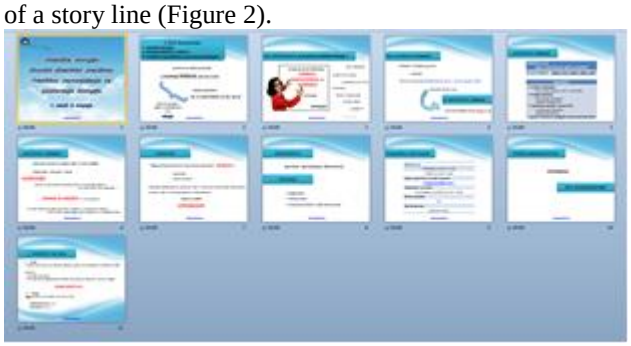

Figure 1. Linear Sequence of PowerPoint Presentation.

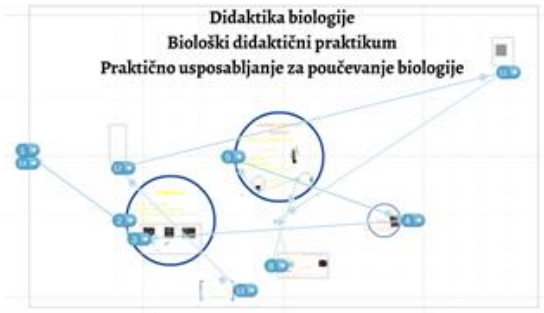

Figure 2. Free-flowing Prezi Presentation

Table 2. Disadvantages of PowerPoint and Prezi Presentation

PowerPoint	Prezi
- slides are static, linear (Fig. 2) - more difficult to visually encode the physical or logical relationship among elements of a presentation when those elements are separated by strong display boundaries - lack of diversity - requires the installation of the entire Microsoft Office Pack - compatibility problems may appear between versions - the fonts must be available and various problems may occur with the video files - it does not offer the possibility of simultaneously having a document edited by several users - it requires resizing the pictures at an optimal resolution or the final presentation size in Mbits will be large - effect combinations are difficult to apply	- many of previously presented strengths are only available in the paid account version - requires the existence of an internet connection and the creation of a user account on the Prezi.com website - at less high-performance computers, the frame movement during the presentation may be fragmented - desktop version has several disadvantages: only available for a fee; PDF files cannot be inserted; the application can be used on 3 computers with one license; the more complicated graphs must be made by using a specialized software; the limit per inserted file is 50 MB; files can be inserted, regardless of their size; - the forms can overload the presentation content - due to the over-mobility, imagines can create visual discomfort - limited and fixed time of auto-play a single animation or slide (just 4, 10 or 20 seconds)

Relationship between presentations and degree of learning outcomes, self-efficacy, cognitive load and motivational variables

Concept mapping technique, as a valuable instrument in science teaching, has been organized as a useful tool in assessing students´ knowledge structure about a certain topic (Zele &Lenaerts, 2004). Concept mapping is an effective teaching and learning strategy for both instructors and students to visually examine what students have learned. Through the mapping process, learners may examine their own existing knowledge and learn how to thing in more critical and complex ways rather than only in a linear manner (Gul & Boman, 2006). The visualizations would affect the shaping of knowledge in a positive way (Kress et al., 2010). Especially science teachers should therefore use graphics organizers in presentations during which they display the explicit structure of the information (Casteleyn & Mottart, 2012). Prezi encourages using graphic organizers (concept maps, mind mapping, Figure 1) and these could be an alternative to the linear sequencing in most presentation, like PowerPoint is.

Prezi is also a window of opportunity to revitalize the interest in graphic organizers, which are not frequently implemented in classrooms (Kinchin, 2001) but those are very effective in teaching and learning process. When concept maps are applied in the design of e-learning materials, it can foster learning performance and computer self-efficacy (Shaw, 2010).

Many studies have examined the effect of PowerPoint on motivation, self-efficacy and the academic successes of students, and many studies have compared PowerPoint with traditional classes but a few studies were compared the same characteristic between PowerPoint and Prezi presentation. Accordingly to Casteleyn & Mottart (2012) research there is no clear indication that graphic organizers (Prezi) as delivered via presentation software (PowerPoint) can positively affect learning outcomes, self-literacy, perceived mental effort and appreciation of the learning material. Johnson & Christensen (2011) retrieved a similar result when they compared simplified, visually rich slides to more traditional presentation slides. On the other hand, evidence-based literature about graphic organizers has demonstrated its positive impact on learning when students are asked to constructed them (Ballentine, 2012).

In this paper are presented characteristics of Prezi and PowerPoint presentations, some significant differences in learning outcomes, self-efficacy, cognitive load and motivational variables between PowerPoint and Prezi presentation. Finally in the paper are represented to survey biology students´ opinions on and attitudes to PowerPoint and Prezi presentation usage.

METHODS

The participants for this study were student biology who volunteered for this study. They were from the 3th and 4th university years at the Faculty of Natural Sciences, University of Maribor in Slovenia. They completed a

questionnaire prepared for the purpose of the study. They completed it in electronic form. The questionnaire was prepared with Google Drive. We collected 63 questionnaires from 47 women (74.6 %) and 16 (25.4 %) men.
The questionnaire contained three parts. The first part of the questionnaire solicited demographic data such as gender. The second part concerned students' attitudes about usefulness of different presentations (Prezi and PowerPoint). The answers were measured by a 5-point Likert scale. The scale questionnaire was as follows: 0 = I have no base for answer; 1 = definitely disagree; 2 = disagree; 3 = agree; 4 = definitely agree. Students were to value percent's of their university professors' usage of presentations during lectures. The scale questionnaire was as follows: 1 = 0 – 24 %; 2 = 25 – 54 %; 3 = 55 – 74 %; 4 = more than 75%; 5 = all professors. The third part was an open question about advantages and disadvantages of Prezi and PowerPoint presentation. Similar answers were grouped in to four complexes which describe the same answers.
The reliability of the questionnaire about usefulness of different presentations (Prezi and PowerPoint) was measured by the Cronbach coefficient. The Cronbach reliability coefficient was 0.94 for the 7-item scale, which can be considered satisfactory. Microsoft® Excel 2010 was used for data input. The analyses were performed with the statistical package SPSS 21.0, where we used descriptive statistics; One-way ANOVA was used to examine differences in opinions by student gender why they use presentations. The Chi-Square test (χ^2) was not used for comparison of differences between results from the student opinions about the advantages and disadvantages of PowerPoint and Prezi presentation because we have no results of Prezi usage.

RESULTS and FINDINGS

One of background question was when and where students learned about e-presentations. In a primary or secondary school 36 students (57.1 %) learned about presentation, 20 students (31.7 %) learned about presentation at university classes and just 6 students (9.5 %) claimed that they learned about presentation by them own across investigation. No one took the special lessons or training to learn about e-presentation.
In Slovenia in most know PowerPoint presentation, so the results are not surprises; the 57 students (90.5 %) use PowerPoint and just 6 students (9.5 %) use PowerPoint and Prezi presentations. We have no students to use just Prezi. Students mostly do not use the Prezi because they do not know it and almost the same results are at professors' usage of Prezi presentation. We asked students who many professors at lectures use presentations and 53 (84.1 %) students claimed that more than 75 % of professors during lectures use the presentations but less than 10 % of them use Prezi presentation. Across my researching I found at that Prezi use just one professor and his field is computer science.
With questioner we asked students about advantages and disadvantages of Prezi and PowerPoint presentations but we could not made s comparison of differences between results because just 6 students know the Prezi presentation and these results cannot be relevant. Students who use Prezi claimed that it is good because it is free of charge and because of zooming in and out it is more interesting than PowerPoint. Why students do not use other presentation than PowerPoint is clear out of those statements:

- ″I saw Prezi presentation. It is very interesting but I do not use it because I do not know how″.
- ″I do not use the Prezi because all lecture room has no Internet connection″.
- ″I use PowerPoint presentation because I am familiar with it, it is accessible and mostly use it″.
- ″I will not use Prezi because it is too trumpery″.
- ″Prezi has no support for different plugins for Chemistry, Physic, Mathematic … but PowerPoint has″.
- "I use PowerPoint because I do not know the other presentation programs.″
- ″PowerPoint meets my all presentations needs and therefore I do not use other applications″.

PowerPoint is a user-friendly package (Uz et al., 2010) and our study also confirms it. 54 (85.7 %) our students said that it is easy to use PowerPoint presentation. There are no significant differences at statement of using PowerPoint presentations by gender. Students mostly use it for the creation of visually clear. Three students (4.8 %) use it because the professors request. Even 6 (9.5. %) students thing just of herself; they use PowerPoint to make their oral presentation easier. These students are not interest in audience and how to effective to represent the contents but just to do it and by easier way. Out of this item these students while preparing PowerPoint presentations do not follow the principles that need to be followed.
Students need more instructions how effective make presentations. At the lectures they see finished presentations but they can to make it effective if they do not kwon how or if they do not follow the principles that need to be followed to make effective presentation.

CONCLUSION

Understanding the metaphors that underline PowerPoint, other tools like it, and differentiated tools such as Prezi give information designers valuable insight to guide their decision when choosing an appropriate presentation tool. The metaphor that underline Prezi afford it unique characteristic (concept-mapping), and the same is true for traditional tools such as PowerPoint. Although Prezi allows created concept-maps there is no clear indication that can positively affect learning outcomes, self-literacy, perceived mental effort and appreciation of the learning material. Familiarity with these characteristics and their inherent strengths allows information designers to choose the tool most appropriate to the content and situation of their specific presentation (Bean, 2012) and it is up to everyone´s IT skills, creativity and innovative inspiration to choose how to make the presentation. Regardless of the used software for creating a presentation and the purpose they are made for (e-lecturing, showing a work report or the conclusions of a research, explain complicated sciences phenomenon…), the presentations are extremely indispensable. The advantages of the presentations, no matter how they are built, are obvious: the conveyed massage is clear, concise, systematized and structured; the message is accompanied by graphics elements; it is attractive, it stimulates curiosity and it holds audience´s interest (Chicioreanu & Oproiu, 2012).

In further research we would like to represent Prezi presentation to our students and make them to use it. After some period of time we would like to find out which one of software presentation; Prezi or PowerPoint; they would like to prefer.

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