WHY TURKISH PRE-SERVICE TEACHERS PREFER TO SEE POWERPOINT PRESENTATIONS IN THEIR CLASSES

Funda SAVAŞCI AÇIKALIN
Istanbul University
Hasan Ali Yücel Faculty of Education
fsavasci@gmail.com

ABSTRACT

PowerPoint has become very popular presentation software used in educational settings. The literature indicates that the effectiveness of PowerPoint presentations is inconclusive and that students have positive attitudes toward PowerPoint presentations. However, the question why students prefer to see PowerPoint in their classes is still in discussion. Therefore, the purposes of the study are to investigate pre-service teachers' attitudes toward PowerPoint presentations, understand the reasons why they prefer to see PowerPoint presentations in their future classes, and present their suggestions about the ways to improve the quality and usefulness of PowerPoint presentations. "Presentation Software Survey: Student Perspective" (Frey & Birnbaum, 2002) was used in order to collect data for this study. The survey contains 12- item Likert type questions and two open-ended questions. The data were collected from 211 pre-service teachers studying at three different departments in one of the large Turkish Universities. The findings of the study indicated that the majority of the participants prefer to see PowerPoint presentations in their future classes for helping them study for the course exams and providing the long term retention of knowledge. More than half of the participants suggest that more visuals, pictures, and videos should be used in PowerPoint presentations.

INTRODUCTION

PowerPoint has become very popular presentation software used in business and educational contexts (Craig & Amernic, 2006; Szabo & Hastings, 2000). It is estimated that PowerPoint is used over 30 million presentations a day and its software is on 250 million computers on the world (Savoy, Proctor, & Salvendy, 2009). While PowerPoint lectures become more prominent in the higher education institutions (Brown, 2007; Craig & Amernic, 2006; DenBeste, 2003; Gier & Kreiner, 2009), there has been a debate about the advantages, benefits, and effectiveness of the software. Initially PowerPoint is designed to help structure both the content and the process of a lesson or lecture and prevent it from rambling (Hlynka & Mason, 1998; Savoy et al., 2009). Supporters of PowerPoint believe that PowerPoint helps to keep students' interest and attention to the lecture (Szabo & Hastings, 2000), improves students' learning (Lowry, 1999), and aids explanations of complex illustrations (Apperson, Laws, & Scepansky, 2006). On the other hand, Creed (1997) describes PowerPoint as a teacher-centered instructional tool that nourishes teacher-controlled lectures. Similarly, Tufte (2006) points out that PowerPoint reduces the analytical quality of a presentation, limits the amount of detail that can be presented, and often weakens the verbal and spatial thinking.

Moreover, the research studies indicated conflicting findings about the effectiveness of the PowerPoint in terms of improving student learning (Craig & Amernic, 2006; Levasseur & Sawyer, 2006). Gier and Kreiner (2009)'s study conducted on 73 undergraduate psychology students showed that when the students were actively engaged in the class and PowerPoint presentation was supported by content based questions, the information retention was increased. Szabo and Hasting (2000) conducted three studies to investigate the efficacy of PowerPoint lecturing and found a significant difference of students' grades between overhead lecture and PowerPoint lecturing in their only second study. They suggested that the efficacy of PowerPoint lecturing may be case specific rather than universal.

Other studies found no significant difference in students' academic achievement between the traditional lectures and PowerPoint supported lectures (Daniels, 1999; Savoy, Proctor, & Salvendy, 2009). Daniels studied with a group of students taking economy courses without desktop presentation programs (DPP) materials and a year later studied again with the same group of students taking another economy course with DPP materials. Daniels compared students' test scores and feedbacks and concluded that use of DPP neither improved nor hindered student performance. However, almost all of the students (98%) had positive attitude toward DPP materials and found DPP materials useful. Similarly, Savoy et al. conducted a study in the U.S. with 62 students enrolled in the human factors in engineering course in order to compare information retention between PowerPoint and traditional lectures. The findings of the study also showed that no significant difference was found between PP group and the traditional group in terms of most of the assessment variables. In fact, the traditional group scored higher than the PP group at audio assessment variable.

Apperson, Laws, & Scepansky (2006) examined the impact of the use of PowerPoint on students' experience in the classroom. The findings of the study indicated that although there were no differences in grades as a result of the use of PowerPoint, organization and clarity, entertainment and interest, professor likeability, and good professor behaviors were enhanced with PowerPoint.

Bartsch and Coben (2003) investigated the effects of three types of presentations including transparencies, basic PowerPoint (only text) and expanded PowerPoint (text with pictures and sounds) on student learning and attitudes. Students preferred PowerPoint presentations since they believe they learned more from PowerPoint presentations. However, their course grades revealed a different conclusion that students came from the expanded PowerPoint lectures did worse on the exams and had greater dislike for slides with pictures which were not relevant. Other researchers have demonstrated that material such as irrelevant sounds (Moreno & Mayer, 2000), interesting but extraneous text (Schraw, 1998), and irrelevant pictures (Mayer, 2001, p. 113) can reduce comprehension.

Although the research about the effectiveness of PowerPoint supported lectures is inconclusive, studies indicate that students have positive attitudes toward PowerPoint (Apperson, Laws, & Scepansky, 2008; Can, 2010; Craig & Amernic, 2006; Kahraman, Çevik, & Kodan, 2011; Levasseur & Sawyer, 2006; Susskind, 2005; Uz, Orhan, & Bilgiç, 2010). Apperson, Laws, and Scepansky (2008) investigated student preferences regarding the physical structure of PowerPoint. Students completed a 36- item 7-point Likert scale survey and four open-ended questions indicated that they preferred the use of key phrase outlines, pictures and graphs, slides to be built line by line, sounds from popular media, or that support the pictures of graphics on the slide, color backgrounds, and to have the lights dimmed.

Perry and Perry (1998) surveyed with 98 students from computer information system and teacher education departments in order to determine students' preferences among four different types of presentations including multimedia, overhead transparency, chalkboard, and straight lecture. They found that a majority of them preferred multimedia presentations for several reasons including being more eager to attend to class, finding the course more interesting and more enjoyable, and holding their attention more. They also believed that they learned better and easily understand the difficult concepts with multimedia presentations. Can (2010) studied pre-service teachers' attitudes towards the effects of use of teaching materials including overhead projector and projector on learning and found that students believe that use of overhead projector and projector brings some kind of change, prevents teaching from being monotonous, and helps making a lively, colorful teaching and learning environment.

In a recent study, Kahraman, Çevik, and Kodan (2011) investigated the students' attitudes toward the use of PowerPoint in terms of gender and departments. They collected data by using "attitude toward the use of PowerPoint" instrument from 653 students studying at different colleges in the same university. The findings of the study indicated that there was no significant difference of students' attitudes toward the use of PowerPoint in terms of gender, but there was a significant difference in terms of colleges. Students enrolled in the Faculty of Engineering had more negative attitudes towards the use of PowerPoint compared to other students at different faculties (education, economics and administrative science, and vocational higher education). Some students believed that PowerPoint presentation increase the retention of information in the mind by featuring visuals and increasing their motivation by arousing attention and interest whereas others believed that PowerPoint becomes less effective and more boring if they are used more frequently than necessary and especially the use of PowerPoint carelessly and sloppily prepared cause distraction. Students at school of engineering also expressed that they did not like the PowerPoint presentations filled predominantly with mathematical expressions.

In another study, Uz, Orhan and Bilgiç (2010) collected data via using a Likert type survey developed by the researchers in order to examine pre-service teachers' opinions of the PowerPoint presentations. Data were collected from 684 pre-service teachers studying at different departments of colleges of education from four universities in Turkey. Participants in this study expressed partially positive opinions of the designs of PowerPoint slides and the effects on their learning. Students studying at department of computer education and instructional technologies expressed less positive attitudes while students from the department of education religion and ethics had more positive opinions of the use of PowerPoint. According to the results of the study, students agreed that PowerPoint presentations make courses more interesting and easy to follow. In summary, the recent studies indicated that students found PowerPoint lectures extremely helpful to take notes for exams (Frey & Birnbaum, 2002), excellent method of presentation that aided their learning (Clark, 2008), and still preferred PowerPoint lectures even though it was not affected their grades in a positive way (Bartsch & Cobern, 2003).

While studies showed that student have positive attitudes toward PowerPoint even when their achievement is not positively affected, most of the studies merely focused on comparisons of students' attitudes in terms of gender and department (Apperson, Laws, & Scepansky, 2008; Can, 2010; Craig & Amernic, 2006; Kahraman, Çevik, & Kodan, 2011; Levasseur & Sawyer, 2006; Perry & Perry, 1998; Susskind, 2005; Uz, Orhan, & Bilgiç, 2010). On the other hand, the reasons why they prefer to see PowerPoint presentations in their classes and what they suggest how to improve the effect of PowerPoint are still in question. Therefore the purposes of the study are to investigate student's attitudes toward PowerPoint presentations, understand why they prefer to see or not to see PowerPoint presentations in their classes, and present their suggestions about how to improve the quality and usefulness of PowerPoint presentations. In order to investigate these issues, the following research questions were generated.

1) What are attitudes of the Turkish pre-service teachers toward PowerPoint presentations?
2) Why do they prefer to see -or not to see- PowerPoint in their classes? In other words, what are the reasons behind the attitudes of the Turkish pre-service teachers toward PowerPoint presentations?
3) What do Turkish pre-service teachers suggest to improve the quality and usefulness of PowerPoint presentations?

METHODOLOGY
In order to collect data for this study "Presentation Software Survey: Student Perspective" (Frey & Birnbaum, 2002) was used. The survey includes 12- item Likert type questions and two open-ended questions. The survey was translated to Turkish by the author and it was translated back to English by another Turkish scholar in order to increase the reliability of the translations. Based on comparisons and revisions, the final Turkish version of the survey was created. After converting the negative statements, the reliability of the survey was calculated as Cronbach's alpha = 0.82, which indicates that it is a reliable survey. Data for this study were collected in fall 2010.

The data were collected from 211 pre-service teachers (116 female - 95 male) in one of the large Turkish Universities. The participants were junior and senior students studying at three different teacher education departments (66 elementary, 84 social studies, and 61 science education). All of the participants were voluntarily participated in the study. The survey was given to the participants in different classes. The participants generally completed the survey in 15 -20 minutes.

The quantitative part of the data was analyzed by using SPSS (18.0). Descriptive statistics was calculated for each question. The mean scores for responses given to the survey questions were calculated (strongly disagree= 1, strongly agree= 5). The qualitative part of the data was analyzed by using inductive analysis.

RESULTS
In order to answer the first research question, descriptive statistics was calculated. Table 1 shows the mean and the percentages of the responses given by participants to each statement. As seen in Table 1, the majority of the participants (89%) have positive attitudes toward PowerPoint presentations (Question 1, M= 4.01, out of 5). An analysis of the responses given for each statement also indicated that pre-service teachers have positive attitudes towards PowerPoint presentations. The qualitative data from the second part of the survey also confirmed this finding. The data analysis showed that vast majority of the participants (191 participants = 90.5 % of the total) would like to see more PowerPoint presentations in their future classes.

In order to answer the second research question, both qualitative and quantitative parts of the survey were analyzed. Data analysis suggested that there are several reasons why pre-service teachers prefer to see PowerPoint presentations. One of the most significant findings of the study indicated that students prefer PowerPoint presentations because a majority of them (89%) believed that they helped to study for course exams (M= 4.21, out of 5). More importantly, almost half of the participants (47%) strongly agreed with this view. Therefore, it was the most prevalent reason why pre-service teachers prefer to see PowerPoint presentations in their future classes. This popular reason may come from students' beliefs that it is enough to study handouts for preparing for exams.

The second widespread reason why pre-service teachers prefer to see PowerPoint presentations was their beliefs that PowerPoint presentations hold their attention (M=4.09). A majority of the participants (89%) agreed with that PowerPoint presentations hold their attention during the class. Another reason for pre-service teachers' preferences was the role of visual images presented in PowerPoint presentations on the retention of the content for exams. A majority of the participants (88%) believed that visual images presented in PowerPoint presentations help them to recall content during exams (M=4.01). Similarly, 77% of the students indicated that

they do not prefer bullet-point, text-only PowerPoint presentations over presentations with audio, video, or graphics. Many students (84%) also believed that PowerPoint presentations help to emphasize key points during lectures (M=3.92) while 77% of the participants believed that professors who use PowerPoint presentations are more organized during their presentations.

Students' responses to the question why they prefer to see PowerPoint presentations were listed in Table 2. As seen in Table 2, a majority of the participants prefer to see PowerPoint presentations for several reasons. The most widespread response was the retention. Many pre-service teachers in the study believed that PowerPoint presentations provide long-term retention of information and help them to understand the content. Some examples of students' responses are provided as follows:

"I would like to see it more because PowerPoint presentations show the main concepts and help them stay in mind for longer period" (P#6).
"Yes I would like to see more because I believe they increase the retention of knowledge in mind" (P#46).

Table 1: Percentages of the responses given by participants for each statement.

	Strongly Disagree SD (%)	Disagree D (%)	Neutral N (%)	Agree A (%)	Strongly Agree SA (%)	Mean
1) PowerPoint presentations hold my attention.	2	7	2	57	32	4.09
2) PowerPoint presentations increase the likelihood of inappropriate classroom behavior.	13	53	17	16	2	2.42
3) I prefer traditional lectures using a blackboard or whiteboard to PowerPoint presentations.	25	45	5	14	11	2.41
4) Power Point handouts help me to take better notes during classroom lectures.	6	11	9	54	21	3.73
5) Handouts printed from PowerPoint presentations help me to study for course exams.	5	4	2	42	47	4.22
6) Professors who use PowerPoint presentations are more organized during their presentations.	4	6	10	57	24	3.91
7) I prefer bullet-point, text-only PowerPoint presentations over presentations with audio,video, graphics.	29	48	5	9	9	2.21
8) Visual images presented in PowerPoint presentation lectures help me to recall content during exams.	5	5	2	59	29	4.01
9) I am less motivated to attend class when PowerPoint presentations are used during the lecture.	21	53	9	11	6	2.28
10) PowerPoint presentations help to emphasize key points during lectures.	3	6	7	62	22	3.92
11) I have a positive attitude towards PowerPoint presentations.	4	4	3	64	25	4.01
12) I am less likely to attend class when the professor posts PowerPoint handouts to the Web.	18	39	25	14	4	2.48

Taking notes more easily with PowerPoint was the second common response given by the participants. Many participants indicated that they prefer to see PowerPoint presentations since they provide a summary of the topics and highlight important points. Increasing their motivation, and getting their attention were other popular responses provided by the participants. Participants also believed that PowerPoint presentations should be used

since it is easier to prepare for exams with handouts. For example, participant #5 stated that "I think I am getting better prepared with both my notes and PowerPoint handouts". There have been few students stated that they prefer to see PowerPoint if they are carefully prepared and properly used. For example, participant #7 stated that "sometimes I want to see; sometimes I do not because the most difficult topics can be passed quickly by pushing the buttons".

Although the majority of the participants stated that they prefer to see PowerPoint presentations in their future classes, few students (7% of the participants) indicated that they did not want to see PowerPoint presentations for several reasons. One of the reasons indicated by participants who did not want to see PowerPoint presentations was that PowerPoint presentations were not appropriate for every topic. For example, participants #18 stated that "I would like to see PowerPoint presentations in social science courses but not prefer to see in science and math courses". Other reasons given by the participants may listed as passing the slides too quickly, not being in detailed, using too much, not preparing properly, not being explanatory, not allowing discussion much, and distracting.

Table 2: Students' reasons why they prefer to see (or not to see) PowerPoint presentations.

Students' responses	Frequency
Prefer to see because;	
Retention	53
Taking notes	39
Help to understand topics	38
Motivation	35
Getting attention	34
Visual effects/learning	31
Highlighting important points, summary	25
Entertainment	19
Planning well	17
Preparing for exams	12
Easy to follow	10
Time saving	7
Others (easy to prepare, concrete, active, achievement etc.)	5
Prefer to see with conditions	
If prepared to summarize topics	2
If prepared depending on needs	1
If use properly	1
If included interpretation	1
If it is explanatory	1
Not prefer to see because;	
Not necessary for some topics	4
Sliding too quickly	1
Not in detail	1
Too much used	1
Distracting	1
Not allowing discussion much	
No response	6

Students' responses to open-ended questions confirmed the findings of the survey. Very few students stated that they did not prefer to see PowerPoint presentations for some reasons such as sliding too quickly, being not appropriate for every topic, not always being necessary, using too much, distracting their attention. The participant #179 stated that "do not want to see because the presenter may not explain topics in detail and may be limited, it is unnecessary to see the same thing you heard". Six of the participants left unanswered to this question.

In order to answer the third research question, open-ended questions in the second part of the survey were analyzed. Table 3 shows participants' suggestions of the ways to improve the effectiveness and the quality of PowerPoint presentations. One of the most prevalent suggestions indicated by more than half of participants (128 participants = 61 % of the total) was that more visuals including pictures, photos, videos should be placed in PowerPoint presentations to improve the quality and usefulness of PowerPoint presentations. For example, the participant #137 indicated that "more visuals, pictures, or videos should be used if there is only text, it can be boring". Another participant (#5) stated that "in order to become more useful, PP presentations should be

supported by visual effects especially videos related to the content that helps us comprehend and increase our motivation".

Table 3: Pre-service teachers' suggestions of the ways to improve the effectiveness of PowerPoint presentations

Suggestions	Frequency
Adding more visuals, pictures, videos, sound	128
Providing important points/key words Less information	36
Providing handouts beforehand	17
Not reading directly	9
Using appropriate font size	8
Not using always	7
Not being too long	7
Not passing slides quickly	7
Using appropriate colors	6
Connection to daily life	6
Being interesting	6
Providing student participation	4
Preventing technical problems	3
Balancing texts and images	3
Being fun	2
Others (darkness, music, prepared by students etc)	3
No response/idea	20

A number of the participants suggested that handouts should be given before the class so that students can follow during the lectures and take additional notes on it. For instance, the participant #88 stated that "If the handouts given beforehand, we will be able to add any explanation made by teachers on our handouts". Some other participants indicated that they want to have handouts for preparing exams. The following quotations are some examples of participants' responses.

"Handouts should be given in order to increase achievement on exams" (P#85).
"I believe that providing handouts helps not only learning but making study easier for exams" (P#75).

Making presentations interesting and fun were other suggestions made by some participants. Participants indicated that they did not want the instructor read the text directly without interpreting or giving examples from daily life. Some of the participants suggested that the instructor should provide enough time before going to the next slides, should not use PowerPoint presentations too much, and should provide student participation by either asking questions or having them participate in activities. Other suggestions were related to physical structures of PowerPoint presentations such as picking up appropriate colors, font size and text type for effective presentations. Twenty of the participants did not provide any suggestions for improving the quality of PowerPoint presentations.

DISCUSSION
The findings of the current study provide valuable insights about why pre-service teachers prefer to see PowerPoint presentations in their future classes and what they suggest in order to improve the quality and effectiveness of the PowerPoint presentations. The results of the current study indicated that pre-service teachers have a positive attitude toward PowerPoint presentations and would like to see more in their future classes. This finding is consistent with the findings of other studies (Apperson, Laws, & Scepansky, 2008; Can, 2010; Craig & Amernic, 2006; Kahraman, Çevik, & Kodan, 2011; Levasseur & Sawyer, 2006; Perry & Perry, 1998; Susskind, 2005; Uz, Orhan, & Bilgiç, 2010).

Among many reasons why pre-service teachers prefer to see more PowerPoint presentations, the most significant and common one was pre-service teachers' beliefs that it is easier to prepare with PowerPoint handouts for exams. Students may think that it is enough to study PowerPoint presentations handouts for preparing on exams. This finding is also consistent with Frey & Birnbaum's (2002) study showed that students think PowerPoint presentations help them to study for the course exams. However, this situation may be considered as a disadvantage of PowerPoint presentations if students think that it is enough to study only handouts from Powerpoint presentations for the course exams. In the literature this disadvantage was discussed by Gier and Kreiner (2009) stated that students might falsely believe that if they study only what is on the PowerPoint slides that they will do well on the exams. This could be a reason why many studies did not find the significant effect

of PowerPoint presentations on student learning (Apperson, Laws, & Scepansky, 2006; Bartsch & Cobern, 2003; Daniels, 1999; Savoy, Proctor, & Salvendy, 2009).

Another important finding of the current study was the common belief that PowerPoint presentations hold their attention. This point was consistent with Szabo & Hastings's (2000) study. However, the current study indicated that Turkish Pre-service teachers are more likely to have this belief than their counterpart in Frey & Birnbaum's study (2002). According to the current study, Turkish pre-service teachers are more likely to think that visual images presented in PowerPoint presentations help them to recall content during the exams than their counterpart in Frey & Birnbaum's study (2002). This could be the reason why a majority of the participants in the current study suggested that they would like to see more visuals, pictures, diagrams, or videos in PowerPoint presentations. In the current study, Turkish pre-service teachers seemed to be in favor of more visuals than texts, confirmed by Açıkalın's (2009) study indicated that Turkish pre-service teachers focus on more visuals on their Internet search.

The present study indicated that Turkish pre-service teachers would like to have handouts from PowerPoint presentations beforehand. However, the reason for this suggestion was not due to the lack of attendance as indicated by Frey & Birnbaum's (2002) study. Turkish pre-service teachers in the present study did not indicate that they were less likely to attend class when PowerPoint presentations used and handouts from PowerPoint presentation given by hand or posted on the web. In the current study, some suggestions made by Turkish pre-service teachers were discussed in the literature (Kahraman, Çevik, and Kodan, 2011) that PowerPoint presentations should be prepared carefully and used properly.

CONCLUSIONS

PowerPoint presentations are widely used in education and discussed in the literature. The literature indicates that pre-service teachers have positive attitudes toward PowerPoint presentations although the effectiveness of PowerPoint presentations is inconclusive. This situation brings an important question how to improve the quality of PowerPoint presentations in order to increase student learning. In terms of this aspect, the present study may have valuable contribution to the literature. Possible recommendations based on the findings of the current study can be summarized as follows:

1. The quality of PowerPoint presentations depend on mainly the instructor. Instructors should have enough knowledge and ability how to prepare PowerPoint presentations in terms of not only physical structure but also the content. PowerPoint presentations could be turned to typical teacher-centered instruction if instructors do not provide student participation by either asking discussion questions or having students participate in activities.
2. PowerPoint presentations are valuable tools to get student attention at the beginning of the instruction. The most important point here is to keep students attention and interest during the instruction. Visuals including pictures, animations or videos related to content may be helpful to keep student attention until the end of the instruction. However, since unrelated visuals may reduce student comprehension, it is important to pick up appropriate visuals and make the connection with topics. Keeping the balance between the text and the visuals is a key issue to prepare effective PowerPoint presentations.
3. PowerPoint presentations can be more useful if they are clearly organized and briefly summarize the topic. PowerPoint presentations with longer text and slides can have students lost their attention and get boring. PowerPoint presentations should have less but important information.
4. Although PowerPoint presentations are well-prepared, they should not be used all of the times. PowerPoint presentations should be supported by a variety of student-centered methods in which students may actively participate such as activities, experiments, group works, case studies, and discussions.
5. Handouts from PowerPoint presentations can be given to students beforehand. However, if the instruction does not depend on only the PowerPoint presentation, students probably will not think that the course exam will be covered only the handouts from PowerPoint presentations given by the instruction. Therefore, in this way, the attendance problem indicated in the literature will be also solved.

Moreover, based on the findings of the present study, further research is needed in order to investigate the effects of visuals, photos, videos presented on the PowerPoint presentations on student learning and to compare any differences of student learning between students given to handouts beforehand and students who do not receive any handouts.

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