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## Effects of video podcast technology on peer learning and project quality

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### Abstract

In this study, the effects of video podcast technology on broadcasting students' project quality and on peer learning are examined. Herein, the post test control group model is used. While the experimental group submitted their work through video podcast technology, the control group submitted their work via CD. The research group is composed of 94 freshman students from the department of Computer and Educational Technology at Marmara University. The quality of the projects is studied under two sections, namely content and design presentation. To compare the groups in terms of peer learning, both groups benefited from the results of the peer learning exam. At the end of the research no significant difference is found between the group submitting their assignments by video podcast and the group submitting by CD in terms of the content quality of projects and peer learning. When the groups are compared in terms of project design and presentation quality, there is a significant difference in favor of the group using video podcasting. It was also determined in the study that students' interest towards their classmates' video podcasts changed throughout the study.

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*Keywords:* Video podcasting; project; content quality; design quality; peer learning; student interest.

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### 1. Introduction

Constructivism has been one of the most debated theories in the last century. While according to the constructivist theorists Piaget and Bruner, learning occurs in individuals' mind as a result of their exploration and experiences. According to Vygotsky, learning is not an issue of only the human mind; instead, learning occurs through the sharing of ideas with others, and through social interactions in which the previous knowledge is modified or reconstructed (De Lisi & Goldbeck, 1999; Lin & Sun, 2004). In today's educational environment, society has tried to blend those two theories and as a result, has created environments in which the common knowledge of the students is formed by their own experiences, doings, and at the same time, with cooperation from their friends and counseling teachers. However, the time spent at school is not adequate for students to learn through exploring and sharing ideas. Thus, electronic environments have been created to allow those sharings. Video podcast technology is

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one of such electronic media types which can be used to sustain the learning outside the class with interactions and experiences of the students (Lord, 2008). When the students publish their projects and studies with the help of podcast technology, they can form a wide learning community with their classmates and also peers from all around the world.

Podcast technology is sound and video broadcastings which are published on the Internet and downloaded to computers automatically (Evans, 2008). In the literature, “vodcast” and “video podcast” are terms used for video broadcastings, while “podcast” is used for sound files. Nowadays, the use of podcasts and video podcasts is increasing day by day. Podcast technology, in addition to publishing interviews, is usually used for broadcasting classroom lectures and audio books. Recently, student work and materials that they prepare for class have been broadcasted through podcasting, thereby replacing the printed medium in the literature.

Lord (2008) investigated the usefulness of podcast technology, when attempting to improve the pronunciation of students talking Spanish by making them prepare podcasts and comment on their classmates’ podcasts. At the end of the research, development is observed in the attitudes of the students towards learning a foreign language and the pronunciation of it. It is proved that they accepted that method as useful and practical. On the other hand, the study of Frydenberg (2006) has showed that attitudes of students towards others’ podcasts are not always same, and their interest can change according to the conditions. In this research, it is found that podcast downloading is the most frequent for the first podcasts of the teacher. Over time, downloading frequency decreases, but it increases again just before the exams.

Smart (2008) states that web distribution of their work by podcast technology motivates elementary school students to do their best. The language teacher helping 7<sup>th</sup> graders at Longfellow Middle School prepare podcasts states that although their work is not graded, the potential audience of millions encourages the 7<sup>th</sup> graders at Longfellow Middle School to spend hours of their own time writing, editing, and splicing their podcasts (Borja, 2005).

In Xu (2005), it is revealed that the most important factor affecting the interest towards homework is emotional attitude. Thus, according to Xu, the students should be assisted so that they can discover the ways which will turn their projects into more positive and interesting educational experiences.

In the context of the literature, the effects of video podcasts on the quality of peer learning and projects will be examined in this study. It is thought that the results of the study will shed light on how educators can increase students’ project quality and use podcasts in peer learning.

### *1.1. Aim of the Study*

The aim of this study is to determine the effects of video podcast technology on broadcasting students’ peer learning and project quality. Herein, it is attempted to answer the following questions.

1. What is the effect of podcast technology on broadcasting students’ projects on peer learning?
2. Does student interest of peers’ video podcasts change over time?
3. Does using video podcast technology affect broadcasting students’ projects in terms of the content of their work?
4. Does using video podcast technology affect student broadcasting projects in terms of the quality of project design and presentation?

## **2. Method**

In the study, the experimental design of the post-test control group is used. Projects are submitted through video podcast technology in the experimental group and via Cd in the control group. The research group is consisted of 94 freshman students from the department of Computer and Educational Technology at Marmara University.

The research was conducted in the scope of the Information Technologies in Education II course, and 52 students were selected for the experimental group and 42 for control group. The grades in the Information Technologies in Education I course were used to determine the equality of the groups. According to the comparison conducted by an independent sample T-test, it was found that the groups are equal ( $t=1.11$ ,  $p>.05$ ). The students in these two groups (the experimental and control groups) were divided into groups of 4 and completed the group work together.

The quality of the projects is studied under two parts specifically, content and design presentation. The experimental group were taught what video podcasts are, how they are prepared and broadcasted, and how to subscribe to them. The experimental and control groups were taught by the same teacher, and they were given three projects; the first one was a group project and the others were completed individually. While creating their video podcasts, the experimental group used [www.blogger.com](http://www.blogger.com) to upload the videos they has prepared, and [www.feedburner.com](http://www.feedburner.com) to create the feeds of their video podcasts. Finally, they uploaded their video podcasts to [www.podcast.com](http://www.podcast.com). The projects submitted by the groups were evaluated in terms of content and design presentation using rubrics by two people- one of whom was the course instructor , and an average was taken.

To compare the groups in terms of peer learning the results of peer learning exams are used. The first exam was done after the submission of first project, and the second one was done after the submission of second project. In both exams, students projects were examined, and the exam questions consisted of the topics included in students projects but not taught by the instructor during lessons (the first exam included sql queries, and second included web tools). The exams were given without informing the students, and assessments results did not affect the course grade.

### 3. Findings

#### 3.1. Effects of video podcast technology on peer learning.

In order to determine the effects of video podcast technology on peer learning, the average of peer learning exams, those done after project submissions, are taken and the groups are compared. According to the results given in Table 1, there is no significant difference between the groups.

Table 1. Comparison of the averages of peer learning examination grades of experimental and control groups with U test

Groups	N	Mean Rank	Sum Of Ranks	U	p
Control Group	28	26.09	730.50	324.50	.37
Experimental Group	27	29.98	809.50		
Total	55				

In research, to examine whether the interests of students towards their classmates' video podcasts, in the aspect of peer learning ,change over time, the results of peer learning exam that were given after the first and second project submissions are used. According to the results given in Table 2, in the first peer learning the group broadcasting their project as video podcasts did significantly better than the group turning in their project via CD.

Table 2. Comparison of the first peer learning examination grades of experiment and control groups with U test

Groups	N	Mean Rank	Sum Of Ranks	U	p
Control Group	28	23.23	650.50	244,50	.023
Experimental Group	27	32.94	889.50		
Total	55				

According to the results given in Table 3, there is no a significant difference between groups in the second peer - learning examination.

Table 3. Comparison of the second peer learning examination grades of experiment and control groups with U test.

Groups	N	Mean Rank	Sum Of Ranks	U	p
Control Group	28	27.89	781.00	375.00	.96
Experimental Group	27	28.11	759.00		
Total	55				

While a significant difference is observed in the first examination in favor of the group using video podcasting, this difference has disappeared in the second examination, which may be interpreted as the interests of friends of students have changed during the process.

## 2.2 Effects of video podcast technology on project quality.

In order to determine the effect of using video podcasting on the quality of project content, the averages of scores that the experimental and control group got from the project content were compared with an independent sample T test. According to the results given in Table 4, the scores taken from the project content does not differentiate meaningfully, regardless of using video podcast technology or not.

Table 4. Comparison of experiment and control groups' scores of project content with independent sample T test.

Groups	N	Mean	S	sd	t	p
Control Group	52	50.40	27.00			
Experimental Group	42	45.76	23.36	92	.87	.38
Total	94					

In study the average points of design presentation component compared with independent sample T test to conclude the effects of using video podcast technology on design presentation quality; the results are given in Table 5 below.

Table 5. Comparison of design presentation grades of experiment and control groups with independent sample T test.

Groups	N	Mean	S	sd	t	p
Control Group	52	23.71	13.44			
Experimental Group	42	52.07	24.75	92	7,07	0.00
Total	94					

When table 5 is examined, it is clearly seen that the grades taken from the design presentation section differentiate significantly in favor of the group broadcasting their project with video podcast technology.

## 4. Discussion

In this study, the effects of publishing projects by video podcast technology on peer learning and project quality are examined. According to research findings ,when initially studying groups compared in terms of peer learning, a significant difference was observed in favor of the group sharing their project by video podcast technology; however, this difference disappeared during the process. The reasons of this situation can be explained by the results of Frydenberg (2006). In Frydenberg (2006), it was detected that most podcast downloading occurred after the first lesson was given about how to subscribe and download a podcast, and there had been striking decrease in podcast downloading until student students needed to review for their final examination. Another reason for the decrease observed in peer learning may result from peer learning exams, and accordingly, watching video podcasts did not have any effects on who did and did not pass the course. In other words, knowing that they would not be evaluated by grade may cause the loss in student interest towards video podcasting. Thus, students may have watched the video podcasts of only those whose ideas are important for them, come from close friends, or grab their attention, and they may not have felt the need to watch all of the podcasts.

Findings show that video podcast usage as a project submission tool does not affect the content quality of the project. This result contradicts Borja (2005) and Smart (2008). When the reasons of their results are examined, it is seen that in both studies, primary school students developed podcasts, not video podcasts. In both of the studies, teachers led students one-on-one. Moreover, in Smarts (2008), podcasts were uploaded by the teacher. However, in this study, students developed their own video podcasts and uploaded their videos to blogs themselves. Besides ,as podcasts consist of sound files, it is much easier to upload them than video podcasts that consist of video files.

During the practice period, most of the students stated that they had great difficulty in uploading content; and some of the students said that the stage of preparing and uploading was complicated. Consequently, these kinds of problems may have caused students to shorten the videos and also the content.

According to the findings, students who broadcast projects by video podcast, generally prepare better projects in terms of design presentation. This result supports Smart (2008) and Borja (2005) on account of design presentation. Thereby, it can be said that the fact that students' work will reach many people through the Internet encourages students to create better designs and presentations.

## 5. Conclusion and Recommendation

In this research, it is determined that broadcasting projects by video podcast technology does not affect peer learning and project content quality; however, it has a positive effect on design presentation quality. In this study, it is investigated whether students watch their friends' video podcasts in an unconditioned, natural atmosphere. Thus, students were not given information such as that they would take exams based on their friends' video podcasts. In further studies, watching video podcasts of their peers or commenting on them can be made a part of the assessment, and video podcast effect on peer learning can be evaluated again. If commenting on video podcasts can be made a part of the assessment, attitudes and motivation of students upon the shared atmosphere that is provided by this technology can also be evaluated.

These study indicates that there is a necessity for web sites that students can easily produce and broadcast their video podcasts by simply uploading their videos to certain websites without creating a blog or feed, and broadcast it on a podcast site. In further studies, after media holding these qualifications is constructed, the effect of video podcast technology on the quality of projects can be appraised again.

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