

# Συνέδρια της Ελληνικής Επιστημονικής Ένωσης Τεχνολογιών Πληροφορίας & Επικοινωνιών στην Εκπαίδευση

Τόμ. 1 (2016)

10ο Πανελλήνιο και Διεθνές Συνέδριο «Οι ΤΠΕ στην Εκπαίδευση»



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### Βιβλιογραφική αναφορά:

Toki, E. I., & Pange, J. (2022). Video lectures in ICT subjects: perceptions of undergraduate students. *Συνέδρια της Ελληνικής Επιστημονικής Ένωσης Τεχνολογιών Πληροφορίας & Επικοινωνιών στην Εκπαίδευση*, 1, 497–502. ανακτήθηκε από <https://eproceedings.epublishing.ekt.gr/index.php/cetpe/article/view/3858>

# Video lectures in ICT subjects: perceptions of undergraduate students

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## Abstract

Video lectures can be used as supporting educational material published in online platforms designed for blended learning courses for undergraduate or postgraduate university students. The aim of this study is to examine higher education students' perceptions using online video lectures with multimedia resources on ICT subjects in a blended learning method. In this study, Moodle was used as the learning management system to accommodate the video lectures. The results of this study revealed that the students' overall satisfaction and intention on future ICT use, depends upon (i) their prior ability to use video lectures, (ii) the content of video lectures, (iii) the expected learning outcomes, (iv) and their interest in ICT in general.

**Keywords:** video lectures, blended learning, ICT courses, Higher Education

## Introduction

Higher Education students are nowadays the "digital natives" (Prensky, 2001). Students' behavior today in higher education, is different compared to previous generations concerning the ways of learning methods and ICT use (Georgas, 2013; Pange et al., 2011; Shaw, 2001). Students, as "digital residents" (White & Le Cornu, 2011) are characterized by their digital "fluency". They spend a great amount of time online and many are frequently connected in social media. It is well documented that social media are widely used not only for communication purposes amongst the academic community but also for teaching and learning (Lekka & Pange, 2015; Pange, 2008). Although students are very familiar using certain digital tools, such as Google, Facebook, Messenger, Instagram, YouTube, Edmodo and so on, some of them are unfamiliar with some basic ICT tools, like email, word processing, evaluating information on the internet or copyright issues. Nevertheless, in almost every scientific field, undergraduate students have to be connected to the internet in order to attend at least one ICT related course (Toki et al., 2009).

Traditionally, in Higher Education in Greece, face-to-face teaching strategies are generally used. The last decade, many university professors choose to also use blended learning in order to enhance student-teacher interaction and communication. Blended learning is a combination of face-to-face and computer-mediated instruction, engaging the role of computer-based technology at the delivering up to date knowledge (Graham, 2006). These, learning procedures, make use of online educational material available anytime/anywhere and are combined with face-to-face interaction in order to provide upgraded learning capabilities (Nikolaidou et al., 2010; Pange, 2008).

The online educational material can be delivered using a Learning Management System (LMS). The LMS is software used to create, manage and track online learning. It can accommodate asynchronous or synchronous procedures. Social media are also used for some online courses in order to distribute text, audio, video, and graphics. Communication in-between teacher and student in any LMS is using e-mail, live chat sessions, online discussions, online forums, online assignment, quizzes, essays, etc. (Wu et al., 2010).

Recent studies support that video lectures and blended learning may increase students' learning (Kabassi et al., 2016; Kinsky et al., 2009; Nikolaidou et al., 2010; Wu, et al., 2010). Gosper et al. (2008) reported that 67% of students believed that video lecturers helped them to get better grades and around 80% of the students believed that video lectures facilitated their enhanced learning outcomes.

The aim of this study is to examine undergraduate students' perceptions on the use of video lectures as online supporting educational material while attending compulsory ICT courses.

## Material and methods

150 undergraduate students from the TEI of Epirus and 250 from the University of Ioannina (UoI), were chosen to attend the online course material for an ICT course. The participation was complimentary and no extra motives were given to the students. Courses duration were thirteen weeks, in last year autumn and spring semester respectively, but the online material remained open and accessible all year round.

The main research questions were (i) do students like to use video lectures (ii) how students use video lectures (iii) what is the impact of video lectures on students' final exams (iv) do video lectures transform the students' course attendance.

Considering learner's needs, the online educational material was organized and presented accordingly, in an online LMS. LMS used was Moodle. It has been chosen as it is an open source online platform suitable to accommodate the online educational content and to also support a regular undergraduate ICT course in a blended learning method. The online educational material in both courses included thirteen PowerPoint presentations, Lecture notes (pdf), links and pre-recorded video lectures.

The Moodle platform was provided to first year students of the Department of Speech & Language Therapy of the Technological Educational Institute (TEI) of Epirus and to third year students of the Department of Early Childhood Education of University of Ioannina (UoI).

All students could then access, this extra educational material regarding the face to face ICT course. This was an open access LMS.

The professors during the ICT course were able to add extra online educational course material. Especially, were able to:

- upload additional learning objects
- create assessment questionnaire (multiple choice questions)
- create assignments and exercises
- collect students' data and submit new assignments
- connect info to a YouTube channel

At the end of the course an evaluation questionnaire was used in both Departments. It consisted of three sections. Section 1 included demographic close-ended questions, section two gathered information on students perceptions about the online educational material-content and their habits on video lectures, and section three gathered students perceptions on video lectures with sixteen close-ended questions, in a seven-grade Likert scale (1:rarely-

7:very often). The questionnaire was electronically distributed to all students. Additionally, Moodle analytics were used to find out the hits per week concerning the video lecture attendance.

A quantitative analysis of data was conducted using SPSS v.21.

## Results and discussion

110 (21 male and 89 female) from TEI of Epirus and 175 (3 male and 172 female) from UoI fully completed the questionnaires (completion rate 71.25%).

Regarding the students' age from TEI of Epirus,

- 99 (90%) students were between 18–20 years of age,
- 8 (7,27%) students were between 21–29 years of age,
- 2 (1,82%) students were between 30–39, years of age and
- 1 (0,91%) student was over 40 years of age

Regarding the students' age from UoI,

- 156 (89,14%) students were between 18–20, years of age,
- 18 (10,28%) students were between 21–29, years of age,
- 2 (1,1%) students were between 30–39, years of age and
- 1 (0,57%) student was over 40 years of age.

Concerning employment status, only 14 (4,91%) students from TEI reported that they were working fulltime and 34 (11,93%) part time.

According to the results of the descriptive statistics we found that:

Students in both departments, were stated various reasons of why they have chosen to use the online video lectures. According to their preferences we made the following list:

- online courses are offering easy to use learning material (notes and video lectures in the LMS) (75% in TEI and 81% in UoI)
- online courses are accessible from anywhere at any time (52% in TEI and 76% in UoI)
- online courses are useful in case of illness/health problems (48% in TEI and 39% in UoI)
- using online courses there is no need to keep notes during face-face lectures (35% in TEI and 53% in UoI)
- online courses provide useful info for coursework and exams (28% in TEI and 75% in UoI)
- online courses can be as many times as required to understand a topic (22% in TEI and 32% in UoI)
- online courses can be used for final course revision before the exams (17,5%, in TEI and 52% of UoI)
- online courses are used as not to wake up for an early morning lecture (11%)
- online material can be used when students miss a class (8% in TEI and 38% in UoI).

The majority of students in TEI stated that they clearly prefer in the beginning of an ICT course to have face-to-face lecture (76%). Just above half of the students (53%) indicated that they attend face to face lectures very often. In the UoI students preferred blended learning (79%) and less than half of them attend face to face lectures very often (44%). It has to be noted though, that students in TEI were in the first semester of the first year and the UoI students were on their third year of their studies.

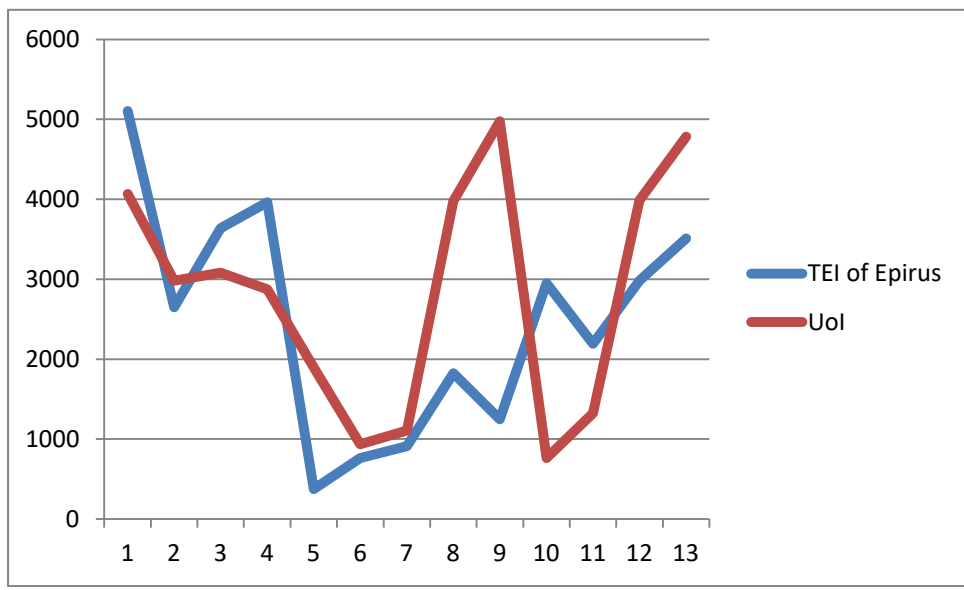
Concerning the frequency of use students responded that only 30% in TEI and 64% in UoI, used the Moodle online educational material very often.

Concerning the intention of future use of Moodle platform more than 80% in TEI stated that they will use it very often. All UoI, students were more familiar with Moodle platform as they have used it already in other ICT courses. This explains their intention to use Moodle in the future was more than 93%.

Regarding whether the video lectures attendance was due to their own decision, or due to their teacher's decision, more than 78% of students in both Departments, replied that it was due to their teachers decision.

Examining the students' opinions about the quality of the video lectures it was found that in both Departments more than 80% liked the video lectures but all students declared that smaller videos in duration will be more useful.

Moodle analytics were used to gather data on usage behavior and specifically the time allocation spent during the semester was examined. Students in TEI and in UoI used video lectures as shown in "Students' hits on video lectures per week" (Figure 1). This graph reports that students of TEI visited mostly the site with the video lectures during the first week and following the visits increased accordingly to the students evaluation procedures: course work (Week4 and Week13) and exams (Week13). Students of UoI also visited the site during the first week and their visits increased on their coursework (Week9) and exams (Week13).



**Figure 1. Students' hits on site using video lectures per week**

Four questions have been used to create the scale of "perceived usefulness" of ICT use and an average 73% of TEI and 78% of UoI, was found. "Perceived usefulness" is a very important factor of evaluation of a LMS In this study we found that Pearson coefficient about "Perceived Ease of Use" directly linked to the factor "Intention to Use" indicating a stronger positive correlation ( $r=0.884$ , in TEI and  $r=0.82$  in UoI,  $p<0.001$ ). This finding is in consistence with relevant studies (Kabassi et al., 2016; Lee et al., 2011; Park et al., 2012).

## Conclusion

In conclusion, this study has given a first insight of ICT and LMS in higher education. For the generalization of our results we can report the limitation concerning the groups of participant students. It was limited to specific departments and a region of Greece. This study revealed the overall positive perceptions of higher education students using the online video lectures. Students prefer to use LMS mainly for coursework during the semester and for revision during final exam periods. Using the LMS did not mainly affect the face to face course attendance.

Students in both Departments declared their intention to use these ICT Applications in the future and they stated their overall satisfaction of leaning new courses using ICT. Their previous experience on using online educational material is an important factor for systematic use of LMS such as Moodle in Higher Education and other non-formal online course material in the future.

Additionally, this study revealed that the more familiar the students are with ICT use, the better the use of the LMS. So, professors have to persuade their students to use online material in LMS in order to become able to study online and prepare for their professional development life-long-learning skills for the future. Universities and Technological Institutes have to support not only students, but also all professors towards this direction of communication and up-to date knowledge.

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