

# **Video Podcasts as a Micro Learning Tool in a Blended Learning Environment**

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## **Abstract**

Today, we are emerging in an electronic society, where the learning is not limited to traditional, face to face approach of instruction only. Educators and learners can get the benefit of electronic technology for teaching and learning, with in a blended learning environment. Micro learning is a new learning technique used in education, for the delivery of the content in small parts, through small steps. This research has discovered the effect of Video Podcasts as a Micro Learning tool on instruction with in a blended learning environment. Participants were divided in two Groups, 'A' and 'B', and had attended an I.T. course that was additionally supported with Video Podcasts. Video Podcasts of less than four [4] minutes were recorded and made available to the participants of group 'A'. The effects of Video Podcasts as a Micro Learning tool had been compared on these two groups through comparing their exam results. Moreover, the participants of Group 'A' were studied for two stages, 'Before' and 'After' the use of Video Podcasts, and their responses were taken for these two stages, regarding students attitude toward Video Podcasts as a Micro Learning tool within a blended learning environment for seven dependent variables. Comparisons had been made on the basis of collected responses for 'Before' and 'After' stages.

**Key words:** Blended Learning, Instruction, Micro Learning, Students Attitudes, Video Podcasts

## **1. INTRODUCTION**

Education is a process of transferring the knowledge, and a vital requirement of modernization. It facilitates the learners to know the world beyond their own environments. Therefore the education is a key to help the process of learning, knowledge acquisition, and skill enhancements. The interest of learners can be increased through good learning practices for the progressive outcomes of knowledge gaining and skills.

Sometimes, it's really difficult for an instructor, to develop the detailed concept of topics, during lengthy lectures, and covering a huge amount of course contents, and this can result in compromised learning outcomes. Generally, instructors have to repeat the concepts repeatedly, and the result is a course that steadily increases and sometimes go out of control.

Micro learning is a process of learning using which the learning content can be delivered through small components, in small steps. Moreover, today, the emerging educational practices are not restricted to the traditional mode of face to face instruction, only. Instructors and students are making the use of electronic communication tools, in combination with their face to face instruction, to cater their educational needs (Auster, 2016). The instructors and learners can get benefit of electronic communication technologies. Video podcast is an electronic communication tool containing digital video information about the content that needs to be delivered.

This research study has used the Video Podcasts as a Micro Learning tool for instruction, within a blended learning environment, and has evaluated the effects of video podcast on the process of instruction.

## **2. BACKGROUND OF THE STUDY**

The Sultan Qaboos University is sole university with in Sultanate of Oman, and all the colleges in the university are using Moodle as Learning Management System (LMS), as a blended learning tool, along with face to face instruction. CET (Center for Educational Technology) is the department, providing the support for the maximum utility of Moodle (SQU, 2016). Sometimes, due to the lack of time and increasing content of the courses, instructors face problem in generating the in-depth ideas and concepts about the topics under discussion, as instructors try their best to cover all the course contents and related information that is believed to be important and it disturbs the concepts building process and the performance of learners. Educational institutions are still using the traditional teaching methods, including chalk and talk techniques, teacher-centered classrooms, where the exams and results are more important instead of explaining and understanding the concepts, however, the technology-driven classrooms are the modern educational techniques, where the importance is given to concept generation and understanding (Noor, 2014). (Hug, 2005) claimed that learning is a practice of knowledge building, and its organization, and better learning outcomes can be achieved by opting and discussing the micro aspects of the learning contents. Blended learning is a mixture of learning methods, a practice that enhance the learning outcomes and experiences of the learners (Joanna, 2013). Blended learning is a combination of different learning practices along with face to face instruction (Giarla, 2016). (Nazarenko, 2015) had stated that the informational abilities of the learners can be enhanced through the practice of blended learning. (Auster, 2016) reported that the mixture of digital content along with the face to face instruction, as a blended learning mode produces positive learning outcomes.

A video podcast is a recording of lectures for the learners, as a video footage or in the form of power-point slides supported with an audio explanation, and the learners' can review these video podcasts after the traditional face to face meeting (Heilesen, 2010). Researchers have reported positive attitudes of the participants' toward using the video podcasts, for the process of learning (Robin, 2012). (Syed & Manzur 2006; Syed, 2006) have indicated following factors to measure the performance of any electronic communication tool: a). Comfortability, b). essentiality or importance, c). friendly or felling at ese, d). help of tool in understanding and learning a specific area or goal.

## **3. WHAT IS MICRO LEARNING?**

Micro learning is a method of learning through small units and short-term-focused activities (Hug, 2005). Micro Learning is a process of learning, in bite-sized small units those are easily digestible (Fernandez, 2014). The interaction with micro content produces the Micro Learning (Mosel 2005). Micro learning is a new technology where the learning is through micro content that is extremely useful, and could be utilized for the development of knowledge and skill (Minimol, & Habil, 2012).

## **4. PURPOSE OF STUDY**

The purpose of this research was to offer an additional learning opportunity to the learners, after face to face instruction, to support the process of knowledge building, through small pieces of information, using the Video Podcasts as a Micro Learning tool with in a blended learning environment, and to analyze the effects of Video Podcasts on the learners' exam results, their attitudes, support of e-tool in understanding and learning the course contents, and their likings, those had a little IT knowledge at the starting of the course.

## **5. METHODOLOGY**

This study has discovered the efficacy of Video Podcasts as a Micro Learning tool on instruction, with in a blended learning environment. The course contents of the course "Basic Computing Skills" for the Module1 "Computer Fundamentals" were designed to be used in a blended learning environment. Total number of students was 50, those were divided in two groups 'A' and 'B', comprising 25 students for each group. Video Podcasts

of less than four (4) minutes were recorded for 'module 1', as power-point slides supported with audio explanation, along with web obtained video podcasts/video tapes less than four (4) minutes, as additional resources, and were made accessible to the participants of group 'A' through the course website, and these participants were requested to watch each video podcast, separately, in different interval of times, however, group 'B' went under traditional mode of face to face instruction. Participants of group 'A' had used their computers, laptops, mobile phones, and other portable gadgets for watching and listening these videos. Firstly, the effects of Video Podcasts as a Micro Learning tool had been compared on groups 'A' and 'B' through comparing their exam results for 'module 1'. Secondly, the participants of group 'A' were studied for the two stages, 'Before' and 'After' the use of Video Podcasts, and their responses were taken for these two stages, regarding students attitude toward Video Podcast as a Micro Learning tool for the key domains, Friendly, Comfortable while using, Essential part of the instruction, Help of Video Podcast toward Understanding and Learning the studied material, help of Video Podcasts in the preparation of exams, & participants' ideas regarding the Instruction through Instructor & supported with Video Podcast, with in a blended learning environment. Comparisons had been made on the basis of collected responses for 'Before' and 'After' stages. A Questionnaire was used to collect the responses of the participants, based on Likert scale, ranging from 1 to 5, where the meaning of: 1. "Strongly Disagree", 2. "Disagree", 3. "Uncertain", 4. "Agree", 5. "Strongly Agree". Plain statistics were made to check any noticeable change, using the statistical means of the participants' responses on 'Before' and 'After' the use of Video Podcasts as a Micro Learning tool.

## 6. RESULTS

### 6.1. ASSESSMENT OF EXAM RESULTS

The Group Means (Averages) of the exam results for groups 'A' and 'B' in Table 1, and Fig.1, show that Group 'A' which was supported with Video Podcasts as a Micro Learning tools with in a blended learning environment had better exam results having a group Mean of (9.87), however, Group 'B' went under traditional face to face instruction got a group Mean of (8.75), and the difference of group Means for these two groups is 1.12, that is equal to 7.46%, presenting the better result for Group 'A'. These outcomes prove that the Video Podcasts as a Micro Learning tool with in the blended learning environment supported the participants to achieve better exam results.

<b>Table 1: Comparison of Exam Results – Group Means (Group 'A' Vs Group 'B')</b>	
<i>Exam Results (Total Marks of the Exam Module: 15)</i>	
<b>Group A:</b> Supported with Video Podcast as a Micro Learning tool	<b>Group B:</b> Traditional face to face instruction without using Video Podcast as a Micro Learning tool
Group Mean – Group 'A'	Group Mean - (Group 'B')
<b>9.87</b>	<b>8.75</b>
Mean difference = results of Group 'A' – results of Group 'B' = 9.87 - 8.75 = 1.12 Conversion of Mean difference in Percentage=> 1.12 (out of 15) = 7.46%	

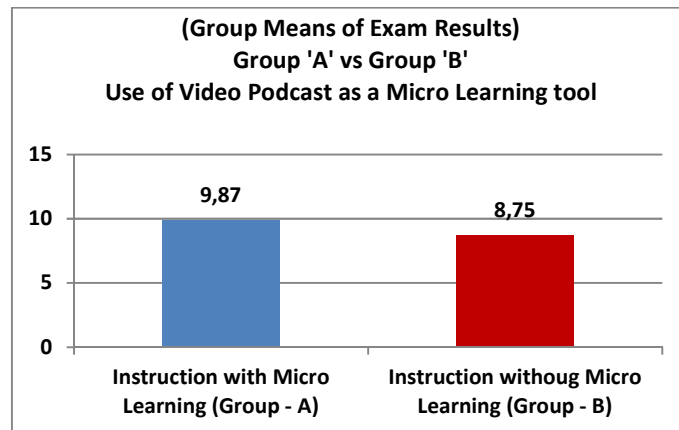


Fig. 1. Group Means of Exam Results – Group ‘A’ Vs Group ‘B’

**6.2. ATTITUDE TOWARD THE VIDEO PODCASTS AS A MICRO LEARNING TOOL**

The group Means of the participants’ Attitude (of Group ‘A’) toward Video Podcast as a Micro Learning tool at the ‘Before’ and ‘After’ stages are given in Table 2, and can be graphically seen in Fig. 2. The data shows that Means of the dependent variables Friendly, Comfortable and Essential were responded very low at the initial stage, however in the ‘After’ stage participants’ responded with a huge size of change by (2.04), (1.96), and (2.24), respectively. Therefore, it has been verified that participants’ had responded positively and accepted the benefits of the usage of Video Podcasts as a Micro Learning tool with in a blended learning environment, and confirmed this tool as Friendly, Comfortable and Essential.

Dependent Variables	Mean		Size of Change
	Before	After	After-Before
Friendly	2.24	4.28	2.04
Comfortable	2.12	4.08	1.96
Essential	1.96	4.20	2.24

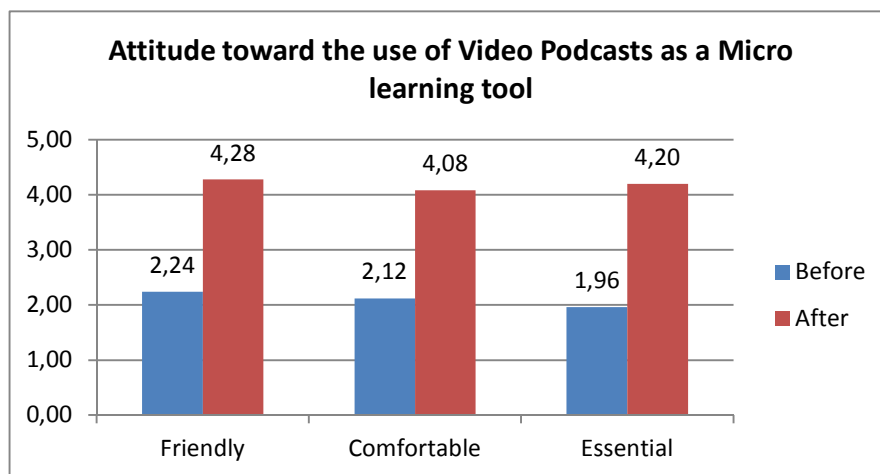


Fig. 2. Attitudes toward the use of Video Podcasts as a Micro Learning tool

**6.3. UNDERSTANDING AND LEARNING USING VIDEO PODCASTS AS A MICRO LEARNING TOOL**

The results of Table 3 show the initial ratings of the participants’ (from Group ‘A’) that was very low, about the Video Podcast as a Micro Learning tool, though, after using the electronic tool, participants’ verified and rated

the Video Podcasts with a big size of change, as a useful tool for understanding and learning the course material and its help in the preparation of exams, by (2.24), (2.04) and (2.08), respectively. The values for Understanding, Learning, and Help in Exam Preparation prove that Video Podcast had impressively supported the participants, and helped them in creating the course concepts. The results can be graphically seen in Fig. 3 for 'Before' and 'After' stages (for Group 'A').

Dependent Variables	Mean		Size of Change
	Before	After	After-Before
Understanding course material	2.24	4.48	2.24
Learning course material	2.16	4.20	2.04
Help in Exams Preparation	2.08	4.16	2.08

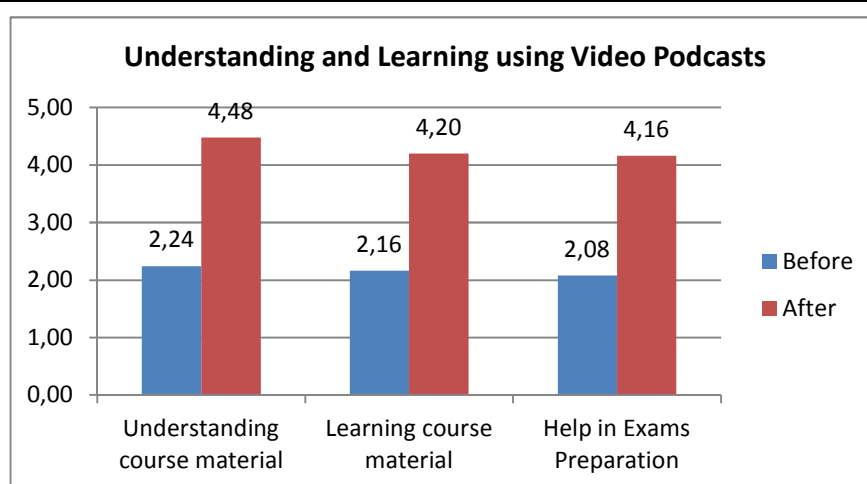


Fig. 3. Understanding and Learning using Video Podcasts as a Micro Learning tool

#### 6.4. LIKINGS OF STUDENTS (MODE OF INSTRUCTION)

Table 4 shows the participants' liking (of Group 'A') toward the Mode of instruction for 'Before' and 'After' stages, and graphically presented in Fig. 4. The Mean of participants' responses toward the dependent variable 'Instruction through Instructor and supported with Video Podcast' was very low in the beginning of the course, with a Mean value of (2.04), however, at the 'After' stage they verified this with a big change in size by (2.20). Therefore, the participants' found the Video Podcasts, very useful tool with in the blended environment.

Dependent Variable	Mean		Size of Change
	Before	After	After - Before
Instruction through Instructor & supported with Video Podcast	2.04	4.24	2.20

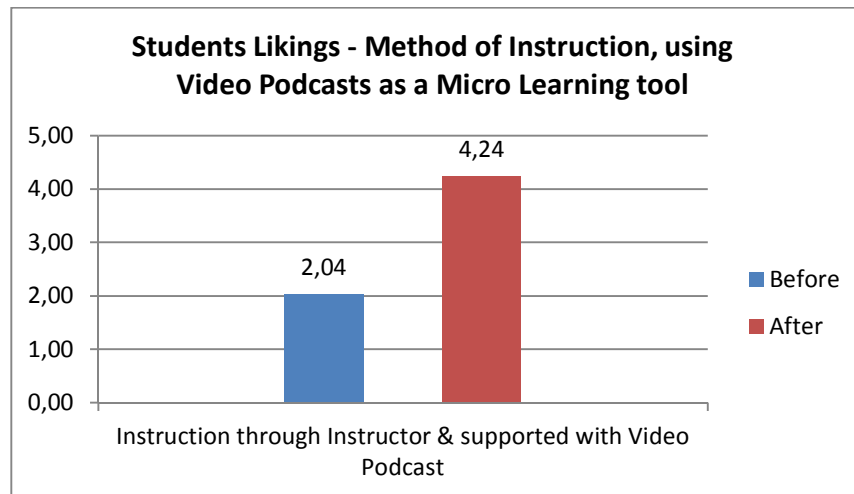


Fig. 4. Students Likings – Method of Instruction using Video Podcasts as a Micro Learning tool

After using the Video Podcasts as a Micro Learning electronic tool with in a blended learning environment, the results of exam were enhanced with an overall percentage of 7.46%. The participants' attitudes (of Group 'A') toward the key areas **Friendly, Comfortable** and **Essential** were very optimistic (along with the size of change by 2.04, 1.96, and 2.24, respectively), and their feedback toward the dependent variables **Understanding, Learning** and **Help of tool in Exam preparations** were also very encouraging. (with a size of change by 2.24, 2.04, 2.08, respectively). Participants had valued the method of “instruction through Instructor and supported with Video Podcasts” with a very high size of change by 2.20.

## 7. SUMMARY AND CONCLUSION

The usage of Video Podcasts as a Micro Learning tool with in a blended learning environment positively effects the process of instruction, learning outcomes and results. This electronic tool offers a friendly and comfortable environment that supports the leaner to feel at ease, helps in creating the detailed concepts, understanding and learning the contents of the course, and has been verified as an important tool for the instruction. The learner can use this electronic tool along with the face to face instruction and can get the advantage from this Micro Learning tool, as it provides the contents of the course through small steps, with small pieces of learning contents that is easily understandable.

Therefore, by adding these Video Podcasts as Micro Learning tool with in a blended learning environment, an optimistic modification can be made and the practice of teaching and learning can be improved to get an overall better learning outcomes. Dear instructors, don't delay any more, and start using the Video Podcasts as a Micro Learning tool, to teach your courses, as an improved solution to overcome the issues related with in-depth concepts development to the learners, and enhance the percentage of learners' understanding, for better results and improved learning outcomes.

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