Effects of Audio Podcasts as a Micro Learning Tool on Instruction

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Abstract

Todays' learning is not restricted to the face to face instruction only. A learner can get the benefit of electronic technology for learning. Micro learning is a method that deals with the teaching and delivery of the content to the learner in small learning components through small steps. This study has discovered the effectiveness of Micro learning on instruction. A course had been designed as a Blended Learning mode for the students of Sultan Qaboos University, Sultanate of Oman, taking the course "Basic Computing Skills" for General Foundation Program. Total numbers of students were 104 and these students had been divided in two groups 'A' and 'B', of 52 each. Audio Podcasts of less than four (4) minutes each, had been recorded for the course Module1, and handed over to the group 'B' through the course website, designed in Moodle; whereas group A hadn't used any Micro Learning tool. Students of group 'B' had used their portable devices, smart phones, laptops and computers for accessing the course website and downloaded the Micro Learning Podcasts for listening. Firstly, the effects of Audio Podcast as a Micro Learning tool had been compared for two groups 'A' and 'B' through comparing their exam results of the course Module1. Secondly, the students of group 'B' had been studied for two stages, 'Before', and 'After' using the Podcast, their feedback regarding their attitude toward Micro Learning for the key areas Friendly, Comfortable, and Essential part of the course, Help of Micro Learning tool toward Understanding and Learning the course material, their feedback toward the new mode of learning, and on the basis of their feedback, comparisons had been done on 'Before' and 'After' stages.

Key words: Micro Learning, Audio Podcasts, Blended Learning, Instruction, Students Attitudes

1. INTRODUCTION

Education is the practice that facilitates the learning, or gaining the knowledge, values, skills, or beliefs. Good learning practices increase the interest of a learner in gaining the knowledge and skills, and results in positive educational outcomes.

Being as an educator, most of us are facing the difficulty of delivering too much content of a course during the lectures, as we try to cover all the information that we believe is essential. The outcome is a course that gradually expands and sometimes become out of control, as new content is added increasingly, and particularly, keeping in view the changing requirements or market needs, and finally it affects the performance of learner.

Today the teaching and learning is not limited to the traditional face to face instruction, only. Educators and learners are using electronic communications for their educational interactions (Auster, 2016). A learner can get the advantage of electronic technology for the purpose of learning. Micro learning is a method that delivers the content through small learning components in small steps.

This research study has used the Audio Podcasts as a Micro Learning tool within the blended learning environment, to analyse the effects of this electronic tool on the instruction.

2. BACKGROUND OF THE STUDY

The Sultan Qaboos University, Sultanate of Oman has nine colleges and nearly all the colleges are using the Course Management System (CMS) Moodle along with the face to face instruction to support the teaching and learning activities, and Center for Educational Technology (CET) is doing the best to provide their services for the maximum use of the CMS Moodle (SQU, 2016). Being as instructors, most of us face the difficulty of delivering excessive course contents, as we try to cover all the concerned information that we believe is important which results in a course that gradually expands and sometimes become out of control and in turn affects the concepts building and performance of learners. (Noor, 2014) stated that traditional teaching methods within the educational institutes are still in place, including teacher-centric classrooms, chalk and talk methods, and regimented classrooms, where most of the importance is on exams and results instead of understanding the

concepts, whereas the modern methods in use are technology-driven classrooms, emphasis on concepts understanding and many more. Learning is a process of building and organizing up the knowledge, and for a better learning the option of micro aspects for different views can be considered (Hug, 2005). (Auster, 2016) had instructed the learners through the blended learning mode, a mode by combining the digital content delivery with traditional face to face instruction and the overall outcomes of this mode were positive. Blended learning contributes to enhance the informational competences of the learners (Nazarenko, 2015). Audio Podcasts is a wonderful electronic communication tool for the distribution of information (Rech, 2007). Audio Podcast acts as a catalyst for the creation of knowledge, and it can be listen through a portable player at any suitable place and time (Lee, McLoughlin, & Chan 2008). The performance of any electronic communication tool can be assessed on the basis of following factors: Comfortability, importance or essentiality, friendly or feeling at ease, help of electronic communication tool in understanding and learning toward a specific goal or area (Syed & Manzur 2006; Syed, 2006).

3. WHAT IS MICRO LEARNING?

"Micro Learning- defined as learning in short, digestible, bite-sized units" (Fernandez, 2014).Micro learning comes from interaction with micro content (Mosel 2005).Micro learning is a process of learning through micro content and this is a new technology that is highly beneficial, could be used for the growth of knowledge and skill (Minimol, & Habil, 2012).

4. PURPOSE OF STUDY

The purpose of this research study was to use the Audio Podcasts as a Micro Learning tool on instruction with in the blended learning environment, to provide an opportunity to the learners for their learning through small pieces of information, and to discover the effects of Audio Podcasts on the students' exam results, attitudes, help of tool in understanding and learning the course material, and the students' likings toward the mode of instruction, those had a little knowledge of IT at the beginning.

5. METHODOLOGY

This research study had revealed the effectiveness of Audio Podcast as a Micro learning tool on instruction. The contents of the course "Basic Computing Skills" for Module1 "Computer Fundamentals" had been designed for a blended learning environment of General Foundation Program, at Sultan Qaboos University, Sultanate of Oman, Total numbers of students were 104 (one hundred and four), and they were divided in two groups 'A' and 'B' of 52 students each. These students were from the same age group, had similar educational background, with a little knowledge of I.T. Audio Podcasts of less than four (4) minutes each were recorded as Micro Learning tool, for the contents of course Module1 "Computer Fundamentals", using the Audacity (a free and open source computer software application for digital audio recording). A course webpage in Moodle was created and these podcasts were uploaded to the webpage. Students of group 'B' had used their portable devices, smart phones, computers and laptops for retrieving the course webpage and downloaded the Micro Learning Podcasts for listening, and they were specially told to listen these Audio Podcasts separately, during different interval of timings, whereas the students of group 'A' went under traditional face to face instruction.

The effects of audio podcast as a Micro Learning tool had been compared for two groups 'A' and 'B' through comparing their exam results of course Module1 "Computer Fundamentals". Moreover, the learners of group 'B' had been studied for two stages, 'Before' and 'After' using the Audio Podcasts and the feedback of learners toward their attitude for Micro Learning concerning Friendly, Comfortable, and Essential part of the course, Help of Micro Learning tool toward Understanding and Learning the course material, Exam preparations, and the feedback of learners about the new mode of learning.
Students' responses for each of the key area were collected through a questionnaire, based on Likert scale, ranging from 1 to 5, where the value (1): was 'Strongly Disagree', (2): 'Disagree', (3): Uncertain, (4): Agree, (5): Strongly Agree.
Simple statistics using responses-means on 'Before' and 'After' the use of Micro learning tool were compared to check if there was any noticeable difference.

6. RESULTS

6.1. ASSESSMENT OF EXAM RESULTS

Table 1 shows the group Means (Averages) of exam results for group 'A' and 'B' and is presented in Fig. 1. Group 'A' did get the course instruction as a traditional face to face mode without taking any help from Micro Learning tool and the Mean of the exam results for this group is 8.30, whereas Group 'B' that did use Audio Podcast as the Micro Learning tool in a blended learning environment had an improved exam results with a Mean of (9.91). The difference of Means for these two groups is 1.61 that is equivalent to 10.7%. These results show that the Audio Podcasts as a Micro Learning tool helped the students' with better exam results.

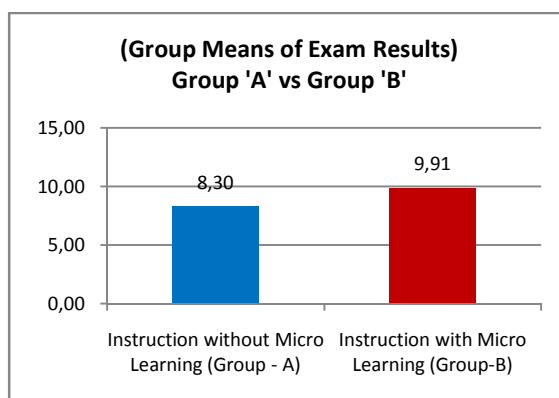| Table 1: Comparison of Exam Results – Group Mean (Group 'A' Vs Group 'B')	
Exam Results (Total Marks of the Module: 15)	
Without using Micro Learning tool Group Mean – for Group 'A'	Supported with Micro Learning tool Group Mean - (Group 'B')
8.30	**9.91**
Mean difference = results of Group 'B' – results of Group 'A'	
= 9.91 - 8.30 = 1.61	
Conversion of Mean difference in Percentage=> 1.16 = 10.7%	

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

6.2. ATTITUDES TOWARDS MICRO LEARNING USING AUDIO PODCASTS

Table 2 shows the groups Means of research study for the students' Attitude toward Audio Podcast as a Micro Learning tool at 'Before' and 'After' stages, along with the size of change. The Means of study for the dependent variables Friendly, Comfortable and Essential wererated very low in the beginning of the course, while in the 'After' stage students responses were higher with a size of change by (1.40), (1.48) and (2.23) respectively. This thing shows that the students' ideas about the use of Audio Podcast as a Micro Learning tool were little 'Before' the use of this tool for the course Module. But after the use of Audio Podcasts it was considerable that the students' attitudes were very positive towards Audio Podcasts as Micro Learning tools and they had considered the Audio Podcasts tool as Friendly, Comfortable and Essential for the Micro Learning.

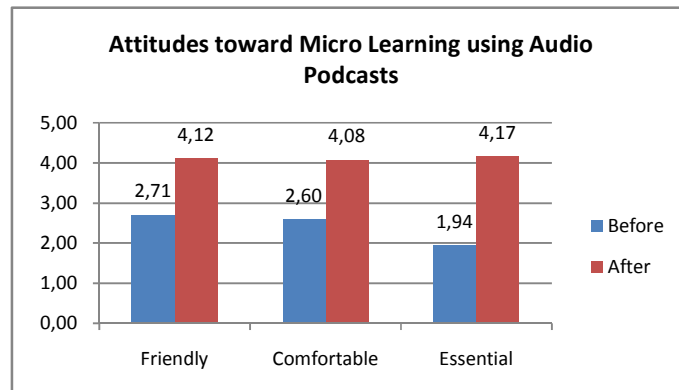| Table 2: Attitudes toward Micro Learning using Audio Podcasts			
	Mean		Size of Change
Dependent Variables	Before	After	After-Before
Friendly	2.71	4.12	1.40
Comfortable	2.60	4.08	1.48
Essential	1.94	4.17	2.23

Fig. 2. Attitudes toward Micro Learning using Audio Podcasts

6.3. UNDERSTANDING AND LEARNING TOWARD MICRO LEARNING USING AUDIO PODCASTS

The Means of Table 3 indicates that in the begging of the course, students' overall ideas about the Audio Podcast as a Micro Learning tool were very low for the variables: Audio Podcast helps in 'Understanding' the course material, 'Learning' the course material, and Helps in Exam Preparations. Whereas, after using the Audio Podcasts, when the students were inquired at an 'After' stage, they appreciated the use of Audio Podcasts with positive responses by a big size of change ('After' – 'Before'), by (1.94), (1.73) and (1.56), respectively. The size of change for 'Understanding course material' with the value (1.94), and 'Learning course material' by (1.73) shows that Audio Podcast as Micro Learning tool had greatly helped the students for understanding, learning, and developing the course concepts Fig. 3 graphically shows the size of change for 'Before' and 'After' stages.

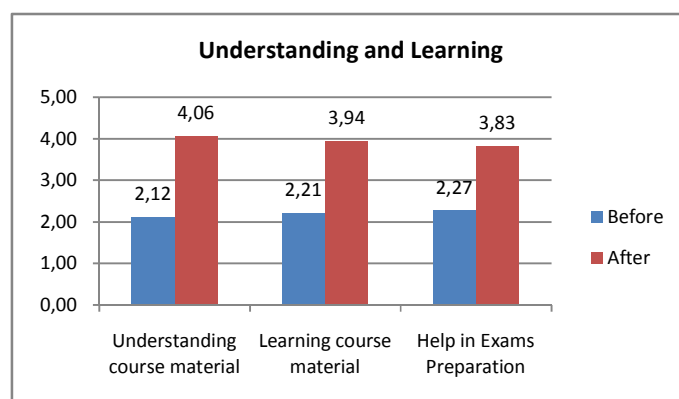| *Table 3: Understanding and Learning toward Micro Learning using Audio Podcasts*			
	Mean		Size of Change
Dependent Variables	Before	After	After-Before
Understanding course material	2.12	4.06	1.94
Learning course material	2.21	3.94	1.73
Help in Exams Preparation	2.27	3.83	1.56

Fig. 3. Understanding and Learning toward Micro Learning using Audio Podcasts

6.4. LIKINGS OF STUDENTS (MODE OF INSTRUCTION)

The means of study regarding the likings of students toward the Mode of Instruction for the 'Before' and 'After' stages are shown in Table 4, and graphically presented in Fig. 4. At the beginning of the course, students were requested to furnish their feedbacks about their likings to study the course 'through instructor and supported with Audio Podcast' and theMean of responses was very low with a Mean value of (1.77),

whereas at the 'After' stage they rated this variable with a huge difference in size of change by (2.65). This thing shows that students liked the use of Audio Podcast as a Micro Learning tool with in the blended learning environment.

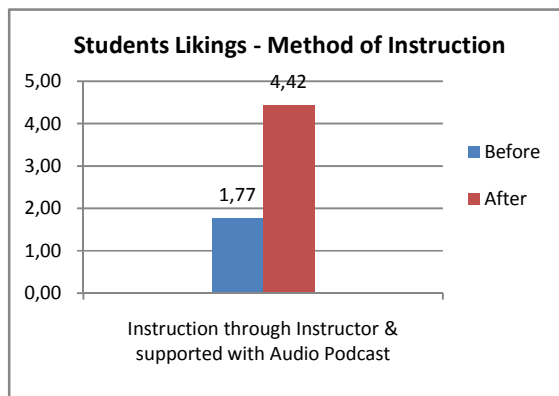| Table 4: Students Likings (Method of Instruction)			
	Mean		Size of Change
Dependent Variable	Before	After	After - Before
Instruction through Instructor & supported with Audio Podcast	1.77	4.42	2.65

Fig. 4. Students Likings – Method of Instruction

After using the Audio Podcast as a Micro Learning tool for instruction, the exam results for the used course module, were much improved with an overall percentage of 10.7%. The students' attitudes toward the key areas 'Friendly, 'Comfortable' & 'Essential' were very positive (along with the 'After-Before' size of change by 1.40, 1.48, and 2.23 respectively), and their responses toward the key areas 'Understanding', 'Learning', & 'Help in Exams Preparations', were also positive (along with the 'After-Before' size of change by 1.94, 1.73 and 1.56 respectively). Students had appreciated the mode of 'instruction through Instructor & supported with Audio Podcast' with a very high size of change by 2.65.

7. SUMMARY AND CONCLUSION

The use of Audio Podcast as a Micro Learning tool leaves positive effects on the learning outcomes and results, during the process of instruction. This tool provides a friendly and comfortable atmosphere that makes the learner feel at ease, supports in concepts building, understanding and learning the course contents, and has proved to be an essential tool for the process of learning. The learner can get the benefit from this Micro Learning tool as it delivers the course content through small learning steps supported with small chunks of learning contents with easily digestible information.

Hence, a positive difference can be made through using the Audio Podcasts as a Micro Learning tool during the process of teaching and learning that can enhance the overall learning outcomes. Dear educators, what are you waiting for? Start using the Audio Podcasts as a Micro Learning tool, to deliver your course contents as a better solution to solve the problems related with course contents, and increase the percentage of learners understanding, concepts building, improved results and overall, better learning outcomes.

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