Educational Podcast via WebQuest for Student Teacher
at Pibulsongkram Rajabhat University

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Abstract

This study aimed to investigate the behavior of students using educational podcasts via WebQuest and to examine their opinions of these podcasts. The study was conducted with 78 students in the Education Faculty at Pibulsongkram Rajabhat University in Thailand during the 2022 academic year. Achievement pre-test post-test and survey were used to collect data. The results showed that the student's achievement post-test scores were higher than pre-test scores, and the student's behavior in using educational podcasts was primarily to study materials, with smartphones being the most commonly used device. Overall, their opinions were satisfied with the educational podcasts, indicating that the students found them useful and effective for their learning needs. These results suggest that the students accept podcasts as a means of taking advantage of the benefits of mobile technologies.

Keywords: Podcast, WebQuest, Pibulsongkram Rajabhat University

Introduction

The Podcast is a digital audio file made available on the internet for downloading to a device or listening via the web browser. The Podcast has widespread due to the increasing popularity of mobile devices. While most podcasts are radio waves, it is important to consider whether such distinctions are beneficial for the medium. Some argue that when considering how podcasts are created and consumed, there is an increasing sense in which podcasting can be seen as a distinct medium. (Berry, 2016). On the other hand, a podcast may be similar to teaching audio materials in the form of an educational radio and a school radio. Using podcasts in studies allows students to study at their own at their own pace by using web technology as a learning lesson on the web. In addition to being the only audio medium, documents or other media can also be used while listening to a podcast. Podcasting as a

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learning medium is an adaptation to audio technology during the Covid-19 pandemic. Adaptation of teaching and learning activities using technology is a demand so that the process is optimal. (Dhamayanti, 2022)

According to Jowitt (2008 as cited in Fernandez, Sallan, Simo, 2015) the main features of podcasting are: portability, flexibility, convenience, the ability to listen anywhere and anytime, multitasking on the go, listening repeatedly, controlling the speed of playback, automatic RSS subscription, free and individual choice of what to listen to, special advantages for auditory learners, enhances services for distance and online students.

Some teachers have used podcasts to record lectures that would otherwise be given in person (O'Bannon, Lubke, Beard, & Brittet, 2011). However, Carvalho et al. (2009) believe that this type of podcast may be helpful for absent students, but it can also be too long and have a lot of background noise. This may be why students are not paying attention in class as they believe they can just listen later.

In Thailand, there have been several implementations of podcasts in education. For example, the Department of Educational Technology and Communications created a podcast-based information transmission system (Matanumt, 2010). podcasts have also been used to enhance language skills, including listening, speaking, and communication skills. For instance, research has been conducted on the use of podcasts to enhance Malay communication skills (Salaebing, & Nuchmee, 2017), and on the relationship between podcasting and speaking skills of English language teaching students (Worabuttara, 2017). Podcasts have been used to improve English listening (Suetrong, & Chongapiratanakul, 2016; Penglee, 2014), in combination with self-direction strategies (Butchan, 2009; Dansakul, 2015), and to promote knowledge and understanding of basic research techniques in computer education (Samrit, 2011) Additionally, podcasts have been used for visually impaired learners (Chaiyanit, 2012) and in micro-teaching (Korkong, 2015). However, no studies have been conducted on using podcasts as a creative activity for students. In this paper, we intend to use podcasts as self-learning material via WebQuest and as a creative activity that allows students to make their own podcasts.

WebQuests were originally developed by Bernie Dodge of San Diego State University in 1995. WebQuests constitute 'an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet (Liang, & Fung, 2020). WebQuest utilizes various information sources available on the internet to provide learners with information (Elgeddawy, 2018). Learners can access designated learning resources immediately without wasting time searching from other sources that may lack desired information or data. This activity also results in students becoming highly engaged learners (Murphy, Calder, Mansour, & Abu-Tineh, 2020).

WebQuests, as educational media, emphasize inquiry-based learning activities, focusing on student participation and comprising six key components (Dodge, 1997 as cited in Liang, & Fung, 2020).

1) **Introduction:** Briefly introduces learners to the topic and outlines the lesson's objectives and tasks.
2) **Task:** Clearly explains the task that learners must undertake. This section uses concise, clear, and interesting language, aiming to foster students' knowledge acquisition.
3) **Process:** Details the step-by-step process of the activity or task to achieve the objectives.
4) **Resources**: Provides prepared resources for students to use in their research, such as links to relevant websites.

5) **Evaluation:** Describes the criteria used to assess and evaluate students, which may include various formats such as quizzes, reports, or presentations using standardized rubrics.

6) **Conclusion:** Summarizes what learners have learned from the WebQuest lesson, potentially ending with questions that encourage students to think and reason based on their task performance.

The use of educational podcasts has become increasingly popular in recent years. However, most research on podcasts in education has focused on their use as a means of delivering lectures or other pre-recorded content to students. This study aims to examine the behavior and opinions of students using educational podcasts via webquest, Webquest is an inquiry-oriented approach that is designed to focus on using information rather than finding it, and to support learners in thinking about information in deeper ways. It consists of six main components: introduction, task, process, resources, evaluation, and conclusion. In this study, we will use webquest to explore the potential of using podcasts as a creative activity for students. By participating in a webquest

Objectives

The objectives of this paper were as following,

1. To create and assess the quality of educational podcasts via WebQuest.

2. To experiment with the use of educational podcasts via WebQuest.

3. To study students' behavior in using podcast.

Definition of Terms

Podcast: A digital audio or multimedia file that can be downloaded or streamed over the internet, typically for educational or entertainment purposes.

WebQuest: An inquiry-oriented lesson format in which most or all of the information used by learners is drawn from the internet.

Teacher students: Students enrolled in a teacher education program or studying towards a degree/certification to become teachers.

Learning Management: The process of planning, implementing, and assessing a structured learning experience, often utilizing technological tools and instructional strategies.

Expected Benefits

This paper expected benefits will bring, both in practical application and in fostering positive attitudes towards the use of technology in education among teacher students.

1. To serve as a guideline for organizing teaching activities using educational podcasts via WebQuest: This benefit helps develop new teaching methods that utilize modern technology like podcasts, enhancing the learning experience for students. It also provides a framework for instructors to integrate technology into classroom teaching.

2. To motivate teacher students to recognize the importance and awareness of using ICT in education: This benefit is crucial for encouraging teacher students to appreciate the significance of information and communications

technology (ICT) in education. Understanding the role of technology in teaching and learning processes will help develop the skills and knowledge of students, preparing them to use ICT effectively in their future teaching careers.

Research Methodology

The study was conducted at Pibulsongkram Rajabhat University, Thailand, during the semester of the 2022 academic year. Data were collected by using a questionnaire consisting of two parts: the first part was about the students' behavior in using educational podcasts via WebQuest, and the second part was about the students' opinions of educational podcasts. The questionnaire was developed based on the review of related literature and was pilot tested before the actual study. We created a total of 5-podcast for use in this study. These podcasts are educational podcasts. Podcasts were created by using the Anchor platform and put each episode via WebQuest by using the Google-sites platform. (see detail at https://sites.google.com/psru.ac.th/webquestpodcast/)

Table 1 Chapter and podcast episodes duration use in study.

Chapter/episodes		Duration (minutes)
1	What is podcast	11.07
2	Podcast Taxonomy	13.50
3	Benefit of using educational podcast	10.23
4	The ways of using podcasts in education	12.35
5	How to make an educational podcast	18.59

As podcasting was the treatment of the study, we conducted the podcast via WebQuest to the students at the beginning of the semester and let them do the pre-test in the class. After that, let the students use the self-learning podcast, and make their own podcast and post-test at the end of the semester.

Research Design

The research has been designed with a quasi-experimental design with a one group pretest-posttest.

Sample of the Research

A total of 85 undergraduate students who are enrolled in Educational Innovation and Communications Technology, Education Faculty at Pibulsongkram Rajabhat University, Thailand during the semester of 2022 academic year constitute the study sample.

Instrument

The WebQuest lesson was used in this research include the following six key components: Introduction, Task, Process, Resources, Evaluation, and Conclusion Quality Evaluation Results by 5 Experts, the quality evaluation by experts demonstrated high ratings across various components of the WebQuest lessons: The introduction section was rated very highly (mean = 4.80, S.D. = 0.414). The content and media within the lessons were also rated very highly (mean = 4.93, S.D. = 0.258). The navigation system was rated exceptionally well (mean = 4.95, S.D. = 0.223). Overall, the lessons received an excellent rating (mean = 4.90, S.D. = 0.303). (see detail at https://sites.google.com/psru.ac.th/webquestpodcast/)

These results indicate that the WebQuest lesson and the developed podcasts were of high quality, successfully meeting the educational standards and effectively facilitating student learning through well-structured and resource-rich content.

Data Collection Instruments

Data were collected using achievement pre-test post-test and survey. The achievement test consists of 20 items about Educational Podcast. The survey, consisting of 14 items was used to gather demographic data as well as data regarding including the format of those podcasts, and study habits in the course. and questions to determine how and where they accessed the podcasts, the number of times they accessed the podcasts, and any difficulty they experienced with access (Weber, 2020).

Results

A total of 78 students were included in the analyses. The results show students' pre-test and post-test had an average score of 10.23 and 14.72 respectively. The students' post-test scores were significantly higher than before at the .05 level were presented in Table 2.

Table 2 Students' achievement score. (n=78)

	Mean	S.D.	D	$S.D._D$	t	Sig (1-tail)
Pre-test	10.23	2.88	4.49	4.28	9.25*	0.000
Post-test	14.72	4.42				

According to a survey, 41.67% of respondents reported listening to podcasts regularly using their smartphones as shown in Table 3

Table 3 Device listening Podcast

Device	Very frequently	Frequently	Regularly	Occasionally	Rarely	Never
Smartphone	10.19	22.22	41.67	21.29	0.92	3.70
Ipad/Tablet	1.85	15.74	32.41	24.07	5.56	20.37
PC/Notebook	11.11	12.96	33.33	24.07	5.56	12.96

The data show that 37.04% of participants reported regularly reading or studying materials while listening to podcasts, making it the most common activity. Commuting was also a popular activity, with 24.07% of participants reporting doing so regularly. In contrast, only 7.41% of participants reported frequently engaging in the least common activity, which was not specified in the original message. Overall, these findings suggest that many people use podcasts as a multitasking medium as shown in Table 4

Table 4 Activity during listening Podcast

Activity	Very frequently	Frequently	Regularly	Occasionally	Rarely	Never
Commuting	4.63	21.30	24.07	21.30	5.56	23.15
Exercising	1.85	14.81	20.37	22.22	9.26	31.48
Doing household chores	10.19	18.52	25.00	23.15	7.41	15.74
Surfing the internet	9.26	19.44	31.48	15.74	13.89	10.19
Reading/studying materials	7.41	17.59	37.04	21.30	9.26	7.41

The results of a survey on satisfaction with listening to podcasts, organized by dimension and topic. The dimensions include content, usability, convenience, productivity, and control, with each dimension containing several topics. The survey found that respondents were mostly satisfied with listening to podcasts, with the highest levels of satisfaction found in convenience-related topics such as being able to listen to podcasts anywhere and at a time that is convenient. The lowest levels of satisfaction were found in productivity-related topics, such as listening to podcasts during commuting and using time effectively while listening. These results can inform podcast creators on what aspects of their content to focus on to increase listener satisfaction as shown in Table 5.

Table 5 Satisfaction with listening to podcasts by dimension and topic

Dimension/Topic	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Content					
Podcast helps me to reach content easily and fast	16.67	55.13	26.92	1.28	0
Podcast provides variety of content	23.08	52.56	23.08	1.28	0
Usability					
Podcast is useful to my learning	19.23	55.13	25.64	0	0
Podcast helps me to learn new skills	25.64	53.85	17.95	2.56	0
Podcast helps me to self-study	28.21	55.13	15.38	1.28	0
Podcast elaborates my thoughts	26.92	48.72	24.36	0	0

Dimension/Topic	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Convenience					
I can listen to podcasts anywhere	24.36	42.31	30.77	2.56	0
I can listen to podcasts at a time that is convenient for me	34.62	44.87	20.51	0	0
Listening to podcasts doesn't cost me anything extra	38.46	41.03	20.51	0	0
I can access podcasts from any device	37.18	42.31	20.51	0	0
Productivity					
I can do other activities while listening to podcasts	26.92	44.87	26.92	1.28	0
I can listen to podcasts during commuting	15.38	50	26.92	6.41	1.28
Listening to podcasts helps me use my time effectively	23.08	51.28	24.36	1.28	0
Control					
I can access content that isn't available through other media	23.08	42.31	34.61	0	0
I can choose the episodes I want to listen	33.33	44.87	21.79	0	0
I can repeat or pause parts of the podcast	35.90	42.31	20.51	1.28	0
I can listen to podcasts at my own pace	38.46	44.87	16.67	0	0
Summary	**27.68**	**47.74**	**23.38**	**1.13**	**0.07**

Discussion

The behavior of students using podcasts as a supplementary learning tool in the classroom reveals that they predominantly use smartphones as their primary device for listening to podcasts. The most commonly reported activity while listening to podcasts is reading or studying the content. This finding suggests that podcasts are a popular tool among students for enhancing their learning experience due to their accessibility and ease of integration into daily routines. This is consistent with the findings of Boulos, Maramba, and Wheeler (2006), who reported that podcasts can serve as an educational medium that allows students to learn at their own pace and schedule. Fisher

and Baird (2006) observed that podcasts provide learners with the ability to engage in on-demand learning and act as a mechanism that actively engages learners with the course content.

The study on student satisfaction with the use of podcasts revealed that most students were satisfied with listening to podcasts. The highest levels of satisfaction were associated with convenience-related topics, such as the ability to listen to podcasts anytime and anywhere. This may be due to the flexibility of using the medium in terms of location and time, aligning with students' lifestyles that allow them to control their own learning.

While podcasts are a highly valuable addition to classroom instruction, they should not be viewed as a replacement for teachers. As Ben H. Darrow from Ohio School of the Air noted, future technologies such as radio and television should serve to stimulate and motivate educational pursuits rather than detract from them. Therefore, it is important to explore the best methods for integrating podcasts into classroom instruction to maximize their benefits for student learning.

Overall, the results indicate that podcasts can be an effective tool for teaching and learning, reflecting students' positive behavior and general acceptance towards their use in education. These findings suggest that podcasts can utilize the benefits of media and mobile technologies, offering valuable support for teaching and learning depending on the learning goals and needs of the students. Further research is needed to explore the full potential of this medium in education, including its impact on student achievement and other innovative ways to incorporate podcasts into the classroom.

Conclusion

1. Using Educational Podcasts via WebQuest is an effective method to support student learning, enhancing their learning experience in an engaging and appropriate manner.

2. The use of Educational Podcasts and technology in education increases the efficiency of teaching and learning, promoting the appropriate use of technology in education.

3. Survey results show that students are satisfied with Educational Podcasts and find them to be useful and effective tools for their learning needs.

Recommendations

1. Analysis of the results of using Educational Podcasts via WebQuest in terms of their impact on students' learning and educational development in the long term.

2. Surveying students' satisfaction and readiness to use Educational Podcasts to understand their needs and improve content creation more appropriately.

3. Analyzing the effects of using Educational Podcasts on teaching and student learning, and comparing the results with traditional teaching methods to understand the effectiveness of using technology in education.

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