Incorporating Podcast in Elementary School Reading Instruction

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Abstract. Because of the insufficient teaching hours and the limited time for practice reading in a classroom, using internet can eliminate the restriction of when and where to teach. Through the publishing and broadcasting functions of the new online broadcasting media, podcast, teachers and students can post and share their reading experiences, which can supplement the insufficient reading instruction in a classroom. The objective of this study is to examine the effect of applying podcast, the educational broadcasting media, to reading instruction. From the students' checkout records and the results of the survey, the conclusions derived are: 1. Incorporating podcasting in reading instruction has a positive impact on students' reading behaviors. 2. Incorporating podcasting in reading instruction sparks students' curiosity and motivates them to learn. 3. Student checked out at libraries more often. 4. Incorporating podcasting in reading makes students love reading.

Introduction

With the technological advancement and the blooming development in wireless communication and sensor technology, the online virtual teaching model was emerged, and the traditional learning method was replaced by digital learning. Teaching mechanism has a great breakthrough. The advancement of learning channels and technologies has marked a new landmark. Therefore, the most concerned issue today is how to communicate with students in a classroom using the new technology and media to improve their learning effectiveness.

In 2005, New Oxford American Dictionary listed "podcast" as a neologism in the year (Oxford University Press, 2013). The word "podcast," also known as "podcasting," was derived from the terms "iPod" from Apple Computer Corporation and "broadcast," It is a mechanism for distributors to post new files over internet and for users to subscribe a web feed to automatically receive new files. It can also be used for producing programs. This new mechanism became very popular in late 2004 for posting audio files. With the advanced technology, iPod, which was originally designed as a music player, began to support video conferencing on its 5th generation product. The original audio format of a podcast was advanced into a video format. Since podcast has been out, many experts and scholars were researching on the topic, particularly its contribution to education. Ji (2006) pointed out that with the matured podcast technology, it is increasingly impactful. Under the global impact of podcast, the education professionals were trying to find its application in the education field. Those who closely followed podcast also realized that its broadcasting feature will lead education and teaching mechanism into a dramatic revolution in the future.

With internet's advantage of eliminating the restriction of when and where to teach, this study suggests the use of the publishing and broadcasting functions of podcast, the new online broadcasting media, to enable teachers and students to publish and share their reading experiences, which can supplement the insufficient reading instruction in a classroom.

Literature review

Features of podcasting. Similar to online streaming programs, a podcast is a radio program broadcasting on the web. Internet users can download a podcast to their iPod, MP3 player, or any portable player and listen anywhere without having to sit in front of computers or tune in real-time. Podcast listeners can design their own podcast programs and upload them to internet to share with others, which makes podcasting more meaningful.Williams (2007) pointed out that podcasting offers users the capability to create or listen to audiovisuals. To watch or listen to a podcast, one can download it to a desktop computer, a laptop, or any mobile device, such as mobile phone, PDA, MP3 player, or iPod. Liu (2009) suggested that the most significant characteristic of podcasting is its great motility. Podcasting users can download a podcast, which was recorded from an online radio program, to their iPod, MP3 player, or other mobile devices, without constantly sitting in front of a computer and tune in on time. They have the freedom of enjoying podcast program anywhere at any time.

Pan (2009) pointed out that the traditional radio program has the advantages of fast broadcasting and ease to tune in. However, the radio program is a linear media. Because the radio messages were only broadcasted once, audiences are not able to choose or keep the contents, which is its disadvantage. Podcasting not only has the advantages of the traditional radio broadcasting, but also completely overcomes its weakness. Li, et al. (2010) pointed out that users can subscribe podcasts. Podcast users can develop a variety of programs to share with the others, which offers a diverse selection. Listeners can subscribe to podcasts on demand according to their personal preferences.

In summary, podcasting is a new application of mobile technology. Podcasting offers audiovisual publishing over internet, and let users subscribe them via RSS to receive audiovisuals automatically. User can transfer audiovisuals to mobile devices, such as iPod and mobile phones, and watch or listen to podcasts anywhere at any time. Podcast users can chose when, where and what to listen, having full control of using this media.

Podcast application in education. In 2006, Apple Computer Corporation invited top universities and education institutions all over the United States to use its iTunes service, such as Stanford University, UC Berkeley, Duke University, and MIT. The professors and students in these universities could use Apple Computer Corporation's free software to link to the iTunes website for downloading files, which made learning easier and more convenient. Podcast has been extensively used for education at collages and schools in the United States. Podcast is mostly used for transforming lecture or speech files (Lee, 2007). In the Department of Philosophy of Duke University, students can download and listen to podcasts about course summaries, such as related information of the text, audio files of textbook contents, and the related questions for students to contemplate before the class.

In the article of "What is the academic efficacy of podcasting?" Heilesen (2010) suggested that podcasting has a positive impact on academic environment. Many students experienced that podcasting was a supplemental tool which actually improved their learning environments. They could more actively and constructively use their time to learn, which has been proven by many empirical new technologies used outside a classroom. Another noticeable fact is that podcasting has attracted new attention from education professionals. It not only provides administrative convenience, but also combines teaching in a classroom with the web-based learning.

Lin (2011) suggested using podcast for social education in museums. This not only provides a platform to explain and present the existing research results and demonstrate its forward-looking information, but also creates a chance to respond to the diversified public demands of science, culture, and knowledge. Tu (2010) stated that mobile learning is increasingly important. Podcast learning is one of the fields which wait to be developed. Although the functions of podcast learning have not met all requirements of language education, its advantage of convenient for learning is favorable to students' habit. After download, students can repeatedly listen to the content anywhere at any time and use the functions of pause or skip to control the learning pace. This supports students with different learning objectives or preferences and reduces the physical dependence of books and images.

In summary, podcast is an open resource. Every user can obtain a free space of their own, produce audiovisual programs, and upload them to websites for sharing with others. Users can also chose or subscribe other people's audiovisual programs and download to their mobile devices to listen at any time. This type of open and sharing mechanism allows everyone to become a beneficiary of shared resources and a creator/provider of resources. This system of positive cycle will surely become a new generation of global learning resource environment. Using this new broadcasting model in learning will foster greater learning performance and motivation.

Learning effectiveness of using podcasts. Jiang (2009) pointed out in the study that students show great wiliness to use new technology of podcasting for learning. It is because students can arrange their time and repeatedly listen to podcasts to correct their mistakes or focus on the unclear contents. Additionally, teachers are also satisfied of using podcasting, because through podcasting, student can learn anywhere at any time, students also have many opportunities to interact with curriculum and therefore learn more from it.

Williams (2007) pointed out that using podcasting has no restriction on time or space, which is more attractive than classroom activities in schools. It improves the listening capability when learning a language. Students like to download and use podcasts because podcasts have diversified contents and are easy to produce and publish. Evans (2008) pointed out that students thought podcast is an effective reviewing tool, which is more helpful than their own notes and improves their learning effectiveness. They also said that they are more acceptable to the learning material in podcasts, compared to the traditional lectures or textbooks. For higher education, podcasts seem to have great potential as an innovative learning tool Anzai (2007) used podcasts as a supplemental teaching tool in English classes for Japanese students. The results of the study show that most of the students felt that using podcast improves their achievements. In the study of "Replacing Traditional Lectures By Podcasts," Kurtz, Fenwick & Ellsworth (2007) pointed out that students scored better in the exam. Students with teaching by podcasts scored 9.5% higher in average than those with the traditional teaching in the previous semester.McCombs and Liu (2007) also pointed out in the study that when teaching the same course in two semesters with different methods, two third of the students found podcasts helped them to achieve better grades. Swanson(2012) Most listeners found podcasts fun and entertaining and said they enjoy sharing what they have heard with peers.

Based on the application of podcasts mentioned above, it shows that podcasts can be used in many areas. The potential applications for education and learning are as follows: 1. Prepare the related information before the class, review the course, create weekly classroom activities, feedback or peer evaluation. 2. Before the class, prepare the teaching materials, list the sections which are more difficult to learn, collect the background information related to the subject, send out questions for students to think of in advance. 3. Students can create their own podcasts, which can be summarized notes, reflections, comments, opinions, or conclusions. Through this process, students' complete independent learning experiences, performance evaluation, or homework scores can be recorded. The process will continue after school to achieve a multi-dimensional learning.

Research Design and Implementation

The objective of this study is to examine the impact of applying podcast to reading instruction on reading behaviors of 5th grade students under the guidance of podcast reading instruction. The results of this study also provide suggestions to instructors for reading instruction in the future.

Participants. The samples in this empirical study were the 5th grade students in a public elementary school in Taichung. Two classes were chosen, and each class was a unit. One is an experimental group of 30 students, and the other is the controlling group of 29 students. The experiment group underwent a six weeks course for podcast reading instruction while the controlling group underwent a six weeks course for textbook reading instruction. Before the courses, the number of library checkouts by students was calculated for the previous six months. After students began the course, the number of library checkouts by students was calculated again during a six month period. The statistics were then analyzed to compare whether a significant difference exists in students' reading behaviors in different groups.

T-test. The number of library checkouts by students during the six month period was calculated before and after the experiment. The statistics were then analyzed to verify whether a significant difference exists in students' reading behaviors in different groups. T-test was conducted to test the difference between the categorical variable and the mean value.

Data analysis and Results

Analysis on number of library checkouts. The number of library checkouts by students during the six month period was calculated before and after the experiment. Table 1-1 shows that before the experiment, the controlling group had more library checkouts than the experimental group. After the experiment, the experimental group had more checkouts than the controlling group. After the experiment, the controlling group had a small increase in library checkouts while the experimental group had a significant increase in library checkouts.

Table 1-1 Statistics of library checkouts before and after the experiment

	Number of samples	Before the experiment		After the experiment	
		Number of checkouts	Mean	Number of checkouts	Mean
Experimental Group	30	16	.533	134	4.467
Controlling Group	29	32	1.103	56	1.931

T-test was conducted on the library checkouts before and after the experiment. Table 1-2 shows that before the experiment, the difference between these two groups of students reached a significant level (t=-5.191, p<.05), indicating that the experimental group had significantly less checkouts than the controlling group before the experiment. After the experiment, the difference between these two groups of students reached a significant level (t=12.399, p<.05), indicating that the experimental group had significantly more checkouts than the controlling group after the experiment.

Table 1-2 Summary of independent t-test on library checkouts before and after the experiment

	Group	Mean	Deviation	t	Degree of freedom	p
Before the experiment Checkouts	Experimental group	.533	.50742	-5.191	28	.000
	Controlling group	1.103	.30993			
After the experiment Checkouts	Experimental group	4.467	1.0827	12.399	28	.000
	Controlling group	1.931	.37139			

Survey analysis. After conducting the six weeks reading course using podcasts, in order to understand students' reading performance and their comments about this experiment, questionnaires were distributed to students, and the students' answers were complied and analyzed as follows:

Students like instructors to use podcast in a reading class. 25 students expressed that they like the approach of incorporating podcast into reading instruction (83.33%), 4 students expressed that it is acceptable (13.33%), and 1 student did not like it (3.33%). According to the data, students are greatly in favor of incorporating podcast in reading instruction. The survey shows that students love it mainly because the content of a podcast is interesting and fun.

Students expressed that they will search for the books referenced by podcasts in libraries. 23students (76.67%) said they will go to library searching for the books referenced by podcasts. 6 students (20%) said they "sometimes" will, and 1 student (3.33%) said "will not" do that. The

survey results show that after watching a podcast, most students will go to library searching for the books referenced in the podcast. Students felt the books referenced in podcasts are wonderful and attractive. Because podcasts introduced a book in a very interesting way, it sparked students' curiosity about these books and motivated them to read them.

Discussion

After the six weeks podcast reading class, most students thought the reading class using podcasts enables them to contact, know, and comprehend more books and book types. Through this, they realize that there are many book collections in the library.

Incorporating podcast in reading instruction has a positive impact on students' reading behaviors. The study results show that students checked out significantly more books from libraries after the experimental teaching. Because the podcasts were focusing on the book collections in the school library, it encouraged a positive change of using library's services more often and borrowing more books by students.

Incorporating podcast in reading instruction sparks students' curiosity and motive them to read voluntarily. The survey results show that after watching a podcast, students tend to have the motivation and behavior of reading the book referenced in the podcast. It proves that the design of the podcast program sparks students' curiosity about the book and motivate them to read it.

Students go to the library more often. The library checkout records and the survey results show that when students watched a podcast which introduced some books, they found out many good books in the library, some of which they have never found before. They are curious about these books that they have never read before. This motivated them to look for and borrow those books from the library.

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