

PODCASTING REPLACEMENTS

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ABSTRACT

Background: Podcasting is a digitally broadcasted audio blog which has become a popular medium for spreading information in the last two decades. From entertainment to education, the dissemination of information using this technology has seen worldwide usage. The ability for regularly downloadable audio files has changed how information spreads in our digital age.

Objective: The primary focus of this study is to examine the feasibility and range of current education models by augmentation through podcasting. Focusing on the applicability, the flexibility, and finally on student reception.

Design and Method: The method for research is based on online database access permitted to Purchase college students. This was a review of correlating data points across a variety of previous peer reviewed journal articles and studies concerning podcasting in education or current education practices. The research questions are as follows: *What are the educational applications of podcasting in education environments? Can the flexible nature of podcasting be utilized in replacing traditional structured lectures? How have end users of podcasting services in education environments traditionally utilized the medium?*

Results: The importance of understanding podcasting's applicability in various educational situations is key. Podcasting is a learning tool and the exploration into its various uses in previous studies helped define various effective uses.

Conclusion: Podcasting is a widely accepted tools for certain learning situations. There is a strong indication that in current teaching from a distance model's students can augment their learning circumstances with podcasting.

Keywords: Podcasting, educational alternatives, audioblogging, distance learning, lecture capture, lecture replacement.

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CHAPTER 1

Introduction

Podcasting was once known commonly as “audioblogging” and it worked very differently than the convenient technology people have become accustomed to today. Listening weekly to your favorite audioblogger meant frequently going to the blogger’s website or logging into services such as America Online which hosted a limited catalogue of digital broadcasts to download the most recent audio file available. These digital broadcast recordings were prevalent before the online distribution of media files became popular with file sharing programs such as Napster in 1999 or Kazaa in 2006, which allowed audiences to easily share copies of audio files. Apple Inc. soon began to see the potential for the medium and incorporated easily accessible serial style digital broadcasting into their iTunes desktop client audio application. The term “Podcasting” is a combination of “Broadcasting” and “iPod” which was the name of Apple’s popular portable music player. Podcasting as a term for this technology was coined in 2004 and is described as listening to automatically downloaded serial audio files on a media player (Rosell-Aguilar, 2007; McClung & Johnson, 2010; Forbes & Khoo, 2015), although the technology for distributing such recordings automatically had been available since 2001 (Copley, 2007).

This format allows for the timely releases of serial programs which can explore numerous topics such as self-improvement, informative editorials, or in-depth reviews of true crime cases. In today’s modern world with the current technologies available to us, the podcasting genre has expanded with its almost universally accessible medium to include areas that are no longer for entertainment purposes. Businesses have begun to use podcasts to keep employees up to date, training purposes, and general information dissemination. Interestingly colleges and high schools

have experimented with usage of podcasting to various degrees as well, which has prompted a myriad of approaches to test podcasting feasibility in education.

Educational possibilities have always been a potent potential in the medium as it allows listeners to multitask, absorbing information on a variety of topics while engaging in other activities. This ability to learn while performing tasks such as exercising, traveling, or doing physically engaging jobs is seen as one of podcasting's strongest points. "Increasing demands on modern learners' time means that they are often forced to study when the opportunity arises, this may be on the bus, train or car, at evening or weekends or during lunch breaks. These demands bring with them the need for portable technologies that enable them to transport their learning materials to access when they can" (McGarr, 2009). This need for a version of easily accessible distance learning has only become clearer in the global pandemic brought on by Covid-19. Students in education specifically have been challenged to continue learning with various new mediums, while maintaining their expected scholastic timelines.

Colleges have included podcasting into their curriculum before as recorded lectures from classes, student created learning materials, and to create talkback radio style segments. Among the first deployments of this technology was at Osaka Jogakuin College in Japan which began to introduce portable media into their education curriculums (Rosell-Aguilar, 2007). "In 2004, Duke, in collaboration with Apple Computer, provided 1600 iPods to incoming freshman and studied the feasibility and effectiveness of the iPod as a tool for academic use by students and faculty over the course of two semesters" (Copley, 2007). These global experiments in podcasting education were the first steps in understanding the application of such a medium and its impact on the education of the student body. With such an easily accessible technology,

the question becomes not should podcasting be utilized, but in what ways and to what extent currently can podcasting be utilized to reinforce educational experiences?

The interest I have in podcasting, specifically in educational environments, comes from a curiosity of educational practices in higher education environments. Many of these environments have been maintaining, until recently, a traditional approach of brick and mortar learning. This approach to education puts constraints on learning which happens within certain defined times and in defined locations traditionally. Technology changes almost every aspect of our daily lives frequently, almost always with the goal of making access to information and the tools to absorb that information more easily accessible. Many higher learning institutions have been slow to pick up on these new educational tools though, relying on in person lectures and paper bound textbooks. Higher education asks an incoming student body to burden themselves with possibly student loans and demanding scholastic timelines, while continuing to responsibly adjust to personal or economic challenges. In our current global climate especially, where daily living situations can be abruptly changed, such as with the current pandemic, it seems irresponsible not to explore every avenue available for flexible learning opportunities. Podcasting is both economically sound to create and easily accessible to an entire student body with little to no cost placed onto the student. If podcasting can be used to help a more active student body to access information while multitasking than there is a need to explore podcasting as one possible avenue for student success.

While there are many facets to explore, I will explore these aspects which I believe are the most pertinent:

RQ#1: *Can the flexible nature of podcasting be utilized in replacing traditional structured lectures?*

RQ#2: *Can this medium be used as a replacement for certain educational experiences? If not, to what extent can podcasting be used?*

RQ#3: *How have end users of podcasting services in education environments traditionally utilized the medium?*

CHAPTER 2

Literature Review

Is learning something that needs to be done in a series of traditional face to face lectures only? With our modern multimedia technologies taking on such a strong presence in students' daily lives, it seems like there should be a moment of reflection on this question. As of writing this in July of 2020, there has been a moment for this reflection as a current global pandemic known as Covid-19 that is separating students from their respective learning institutions. This paper will investigate the idea of podcasting and of theories of learning involving this recent technology known as podcasting. This paper will look at podcasting's ability to possibly reinforce studying, replace lectures, and its possible rolls in educational environments. The student body of today has come to maturity in a world populated by more ways to convey endless amounts of information than perhaps ever before. Listening to podcasts and creating podcasts are two of the avenues easily accessible and approachable to the modern student. Podcasting, as a term, was first put forth in 2004 and is a combination of the words iPod and broadcast (Rosell-Aguilar, 2007; McClung & Johnson, 2010; Forbes & Khoo, 2015) used to describe listening to digital audio blog's in a serial format which is automatically downloaded on a digital media player or personal computer. While podcasts come in both audio and video formats, this study focused on the use of audio podcasts.

Podcasts have been used to various degrees in education before, notably at Osaka Jogankuin College in Japan and at Duke University in the United States (Kennedy, Deshler, & Lloyd, 2013; Pegrum, Bartle, & Longnecker, 2014) to replace traditional face to face lectures or to reinforce the current curriculums. This practice falls into the theoretical framework of understanding modern learning in a digital age known as "Connectivism" (Barron, as cited in

O'Bannon, Lubke, Beard, & Britt, 2011) and is a promising avenue of research into modern learning. As our society changes and our tools become more advanced, the way we convey knowledge changes. Why then is the higher education environment based mainly on listening to lectures in traditional brick and mortar environments? Here we begin to look at case studies of various implementations of podcasting in education environments specifically in the usage, quantifiable benefits, end-user satisfaction, and results.

Flexibility

Higher education environments are incredibly more time consuming than any other previous level of education a student has experienced (High School vs. College: Studying, n.d.). The observed need for alternative learning tools to provide a more flexible learning environment for students to accommodate today's modern on the go lifestyle has been widely accepted (Copley, 2007; McGarr, 2009). This idea can be reinforced with the understanding that comprehension and learning can happen at any time throughout a student's day, be it accidental or intentional (Rosell-Aguilar, 2007). The level in which this new media content can be applied to a college environment is unknown presently. Studies have shown that while an interest will be presented by a overwhelming majority of the student body for access, the student body will not wholly access the material when provided (Copley, 2007; McGarr, 2009; Kazlauska & Robinson, 2011). The presumed notion of utilizing the medium's flexible nature due to the technology currently available would allow students to spend time multitasking, giving students extra time for reviewing the materials while at work, on the bus, or performing menial tasks (McGarr, 2009; Copley, 2007).

The student's access to materials for review is not the only facet of flexibility though, as it gives instructors many options. Student-created podcasting and other forms of creative

podcasting have been explored in studies where students become the educational information source of their studies. Podcasting has given instructors new avenues of exploration for the in class subject matter, from weekly blogs, to creatively used group projects (Rosell-Aguilar, 2007; Pegrum, Bartle, & Longnecker, 2014; Forbes & Khoo, 2015).

Effectiveness

The effective implementation of podcasting in education environments has had many challenges. Students accessibility to the materials has been seen as a challenge in many studies as the hardware costs are shifted onto the student body and the presumed internet connectivity can leave some lower-income students and students from rural areas where internet connectivity is not readily available without this learning advantage (Kazlauska & Robinson, 2011; O'Bannon, Lubke, Beard, & Britt, 2011.) Further, some studies show that when given access to lectures via podcast, it can be underutilized as in the first-year students of the University of Southampton, with only 51% utilizing audio recordings of classes even when that same student body when surveyed almost unanimously called for the technology (Copley, 2007).

On the other hand, there are no studies that show the use of podcasting as an augmentation to traditional face to face lectures has ever had a detrimental effect (O'Bannon, Lubke, Beard, & Britt, 2011; Pegrum, Bartle, & Longnecker, 2014). Though there have been sufficient consistent results in previous studies showing quantifiable positive effects of podcasting enforced instruction, either scholastically or when approaching student material motivation and engagement with materials (Copley, 2007; Rosell-Aguilar, 2007; O'Bannon, Lubke, Beard, & Britt, 2011; Kennedy, Deshler, & Lloyd, 2013; Pegrum, Bartle, & Longnecker, 2014). One study showed marked improvements in students with learning disabilities when

Podcasting was implemented into an education curriculum (Pegrum, Bartle, & Longnecker, 2014).

Application

This literature review examined the implementation practices, approaches, effectiveness, and student engagement with podcasts as a medium in an education environment. It is evident through the reviewed articles that there are varying views about podcasting with different conclusions about the technology's utilization in today's universities. Along with this, it is also clear from the research conducted by the reviewed works that more information is required. Most researchers agreed that podcasting is a valuable avenue of study in both education augmentation and student engagement. The implementation of this technology is still being debated even today, though this form of electronic digital broadcasting is being utilized in today's age more than ever. As our society advances and the need for education continues to grow, these tools will continue to be utilized as the education landscape changes with each new technological tool presented to educators. It is important that we know what these tools are proven to do and what is the correct implementation of these tools for specific learning environments.

CHAPTER 3

Methods

The design of this research is a qualitative approach to the topic of podcasting, and the use of the medium in educational environments. After investigating the specific uses of podcasting in education environments focusing on study expectations versus end user experiences. This study is based on research materials between 2007 through 2015, focusing on scholarly articles. All of the reviewed materials was procured through the SUNY Purchase College Library, using available online databases such as the Australasian Journal of Educational Technology, Innovations in Education and Teaching International, Journal of Radio & Audio Media, Journal of Learning Disabilities, Computers & Education, and the British Journal of Educational Technology. Using these sources, I chose to explore the following research questions:

RQ#1: *Can the flexible nature of podcasting be utilized in replacing traditional structured lectures?*

RQ#2: *Can this medium be used as a replacement for certain educational experiences? If not, to what extent can podcasting be used?*

RQ#3: *How have end users of podcasting services in education environments traditionally utilized the medium?*

Specific terms which were used to search available online databases included, but were not limited to, the following: *Podcasting in higher education, podcasting, podcasting learning tools, distance learning, lecture replacement, podcasting study, multitasking learning, podcasting history, Duke University podcasting trial, Creative podcasting, Theoretical teaching frame works.* After collecting a variety of peer reviewed articles, they were categorized to the most general theme to cover each question. These themes created for my literature matrix became the educational uses in teaching and learning, the infeasibility of educational usage, and

Data/history/terminology. This brake down of themes allowed me to find a variety of information while maintaining the general purpose for each research question in an even-handed approach.

Educational Uses

Research on the affirmative applicability of podcasting as a viable multimedia medium for learning new material via auditory sound files. The positive findings of real-world usage of podcasting in higher education by end users.

Infeasibility

Peer reviewed materials with results of negative interactions on end user experiences using podcasting. This would range from misusages of materials, accessibility issues to newer learning technologies, and any ranging ineffective results from previous studies on podcasting assimilation in education curriculums.

Data, History, Terminology

This section has some overlap with both other themes as it contains the data from certain research articles. It was important to separate the data from the themes they connect to, as the themes dealt with user experience and not direct findings. It was also important to have the history and terminology since the research is exploring a technology, where the technology itself, can be a factor in usage. The history can put podcasting's origins into context as a multimedia medium.

As a researcher and a higher education media service designer by vocation, I find the application of educational technologies to be fascinating. The usage of new and viable learning tools for the creation of easily accessible information is one of the key features of technology. From the invention of the printing press to the birth of the internet, humans have made tools for the dissemination of information a top priority. Podcasting has been a personal interest of mine for many years as I have used the medium as a source of learning, news, and entertainment. This

interests in the technology may have created an unknown bias in the research performed but this may be minimized with my professional background in reviewing educational technologies.

An issue worth exploring though is how podcasting, as a relatively new learning tool, can be applied and what is the price to students and education institutions in pursuing podcasting. My personal belief is that auditory files allow for end users to learn at a self-controlled pace while performing other tasks. After so many years of working with new educational technologies though, I understand that the promise of a product and a user's personal interactions with a product does not mean that the product can be deployed in all educational situations.

Limitations

The scope of my research was limited by the impact of the current global pandemic. This current global situation will impact every research paper, academic environment, and researcher's ability to access their expected resources for possibly years. While I had planned on taking the time off to pursue these topics in full earnest, I find myself unable to. I believe it is safe to say that the world at large is finding the surprise reorganization of their daily lives more than challenging. This does not remove what we refer to during larger construction projects as expected milestones, points of progress that need to be met at specific dates, with the milestone for my research proposal fast approaching.

CHAPTER 4

Results

Podcasting in educational environments has been explored by a multitude of previous studies in both the effectiveness and applications of usage. The following is the culmination of data from a range of those studies to answer the following questions of how podcasting can be applied, has podcasting been a viable learning tool, and the results of those studies. To do this I have used the online resources at my disposal to access studies related to the topic of podcasting over the course of several months.

RQ#1: *Can the flexible nature of podcasting be utilized in replacing traditional structured lectures?*

The implementation of any new educational material begins with making the material in question available to the student body at large. Here we have quickly reviewed the different approaches that various researchers have taken in providing these materials. In all the studies listed in the bibliography that contain experimentation there is a necessity to access online media depositories, student owned hardware, and some level a technical familiarity.

These repositories can be supported from the college in questions online applications such as Blackboard, a learning management system, or from third party sources like iTunesU, which is an education version of Apple Inc's popular iTunes online audio sharing service. This allows students to access the educational podcasting materials during the length of a course without needing to attend an on-campus course or to visit a physical location for access. Surveys from two papers (Copley, 2007; O'Bannon, Lubke, Beard, & Britt, 2011) suggest that almost all students, in these studies over 90%, will access podcasts materials from a computer rather than on a dedicated MP3/4 player. Furthermore 87% of students surveyed indicated that these podcasts would be listened to while reviewing notes from class as a study aid (Copley, 2007) as

opposed to predicted mobile learning expectations. Usage of podcast materials during other responsibilities or recreational time periods was shown in only 23.1% of surveyed users (Kazlauska & Robinson, 2011). This result indicates two things. First, that the expectation of student usage of podcasting as a mobile learning tool must be adjusted. Secondly, that there has been no blurring of boundaries between designated learning time frames and other time usage.

Access to hardware and a lack of technical knowledge needed for podcasting usage can be a variable during some studies. Technical issues can involve as many as 33% of users, particularly from home computers. 22% surveyed had specific problems with podcast file failure or an inability to hear playback of audio files. 47.2% of users had no previous experience with podcasting or podcast usage at all and were unfamiliar with the process (O'Bannon, Lubke, Beard, & Britt, 2011).

RQ#2: *Can this medium be used as a replacement for certain educational experiences? If not, to what extent can podcasting be used?*

Replacement of traditional learning environments in totality with the distance learning option of podcasting has been implicated but not completely explored in education environments. Studies have shown though that when students are given access to full lecture capture podcasts, those students who use them as an alternative can score similarly to students who regularly attend traditional education courses (McGarr, 2009; Kazlauska & Robinson, 2011; Kennedy, Deshler, & Lloyd, 2013; Pegrum, Bartle, & Longnecker, 2014). A majority of students in a study, 57%, indicated that having access to full lecture podcasts would not increase the likelihood of not attending lectures. Though there was a strong indication of 31% that this number would vary depending on the subject matter of the class with only 12% of students stating that they would be less likely to attend a lecture (Copley, 2007).

What has been explored is the usage of podcasting in totality as a reinforcement tool for educational experiences. The varied success of those experiments has been explored in a multitude of incarnations including as a study aid, student made podcasting, and the usage of podcasting students with learning disabilities. This will be broken down into the appropriate three paragraphs.

Most commonly podcasting has been explored as a study aid in education. When podcasting is used in full lecture recordings or when students are given the ability to freely record a lecture themselves, podcast users and non-podcast users score similarly on testing with little marked difference as shown in figure 1. These findings were corroborated by several different experiments with no significant difference in variation to this same result (McGarr, 2009; Kazlauska & Robinson, 2011; Kennedy, Deshler, & Lloyd, 2013; Pegrum, Bartle, & Longnecker, 2014).

Figure 1; Using podcasts to replace lecture: Effects on student achievement (O'Bannon, Lubke, Beard, & Britt, 2011)

Group statistics on course quizzes.

	Group	N	Mean	Std. Deviation	Std. Error Mean
Quizzes	Lecture	33	85.72	5.19	.90
	Podcast	36	89.23	4.64	.77

Student made podcasting, also known as creative podcasting, has been used before to examine the idea of engaging students in the act of podcasting. This requires students to research a topic, create a podcast episode about the topic assigned, and allow other students access to the podcast. Figure 2 shows the resulting test scores of students who were engaged to create podcasts on a topic, broken into two groups with each group making podcasts about one of two topics. Students who created podcasts were shown to score significantly higher on testing when the

questions were about the subject matter related to their own podcast. This analysis found evidence that creative podcasting has been shown to produce marked engagement with the materials and a better understanding of subject matter.

Figure 2; Can creative podcasting promote deep learning? The use of podcasting for learning content in an undergraduate science unit? (Pegrum, Bartle, & Longnecker, 2014)

Average results on exam questions (per cent) on the two topics covered in the podcasting tasks

Year	AB questions		OR questions	
2009	45.1		57.5	
2010 Podcast topic	AB	OR	AB	OR
2010	49.4***	46.8	56.3	57.2

Notes:

In 2009, 276 students were enrolled and were not assigned a podcast task; in 2010, 352 students were enrolled and created podcasts on either "acids & bases" (AB) or "oxidation & reduction" (OR).

The use of podcasting with students who have learning disabilities (LD) were reviewed in testing, specifically involving vocabulary and test retention. As shown in figure 3, these students with LD, when placed into a controlled and designed podcasting experience as a reinforcement aid showed gains in vocabulary performance which was measurable. This result provides evidence for further study into the impact that auditory learning reinforcement may be applicable to LD students in the future.

Figure 3; Effects of Multimedia Vocabulary Instruction on Adolescents With Learning Disabilities (Kennedy, Deshler, & Lloyd, 2013)

Raw Mean Scores and Standard Deviations for Students With Learning Disabilities (LD) and Without LD (Not LD) on the Multiple Choice and Open-Ended Pretest and Posttest (Terms 1–30) and Maintenance Instruments (Terms 21–30).

	MC pretest		OE pretest		MC posttest		OE posttest	
	M	SD	M	SD	M	SD	M	SD
LD Terms 1–30								
Group 1 (n = 7)	10.0	4.65	3.3	3.15	20.6	4.61	25.7	6.6
Group 2 (n = 8)	9.3	2.05	3.0	2.33	19.6	3.33	23.8	5.65
Group 3 (n = 7)	9.3	2.69	4.3	5.59	24.6	6.10	33.4	6.99
Group 4 (n = 8)	10.0	2.13	4.1	0.99	16.6	3.25	14.1	5.99
Not LD Terms 1–30								
Group 1 (n = 60)	12.5	6.47	5.8	6.56	21.8	4.61	45.4	21.61
Group 2 (n = 62)	11.9	5.30	4.8	5.90	21.7	4.39	40.3	14.83
Group 3 (n = 63)	12.2	4.26	5.6	5.90	25.0	3.81	56.0	25.11
Group 4 (n = 63)	12.1	5.18	5.2	6.40	18.3	4.80	31.2	17.90
LD Items 21–30								
Group 1 (n = 7)	2.9	1.68	0.00	0.00	5.7	2.36	5.6	2.03
Group 2 (n = 8)	1.9	1.45	0.00	0.00	6.4	0.92	6.3	2.12
Group 3 (n = 7)	2.0	1.15	0.43	1.13	8.1	1.57	8.7	1.11
Group 4 (n = 8)	2.5	0.93	0.37	0.52	4.1	2.10	3.3	3.32
Not LD Items 21–30								
Group 1 (n = 60)	3.2	2.05	0.28	0.79	6.6	1.81	14.3	8.41
Group 2 (n = 62)	3.1	1.93	0.67	1.43	6.5	1.72	11.9	6.26
Group 3 (n = 63)	2.8	1.79	0.44	1.17	8.2	1.69	18.5	9.70
Group 4 (n = 63)	2.7	1.74	0.60	1.18	5.6	1.65	8.9	6.36

Note. The pretest and posttest MC has a score range of 0–30; the pretest and posttest OE has a score range of 0–60. The maintenance instrument has a score range of 0–10 for MC and 0–20 for OE. LD = students with an LD in an area related to reading; MC = multiple-choice instrument; Not LD = students without a learning disability in an area related to reading; OE = open-ended instrument.

RQ#3: *How have end users of podcasting services in education environments traditionally utilized the medium?*

Students surveyed almost unanimously called for more college materials to be made available via podcasting. When students listened to the material, they found it as informative as traditional paper handouts and useful as review materials. Students also indicated that having access to the material allowed for time shifting of learning periods to fit their own needs. This implied idea by the student body is to enable time shifting of learning periods which could hypothetically allow for more direct contact time with professors (Copley, 2007).

Most studies though showed a general lack of interest by a good margin and that some of the technical barricades were insurmountable to the students. Other students sited a general disinterest due to a lack of elaboration on the speaker’s part. This mono-directional material lacked an essential ability for questions to be raised. This suggests that students would not be

able to rely on podcasting alone and would need an alternative solution for Questions and Answers (Q&A) (O'Bannon, Lubke, Beard, & Britt, 2011).

CHAPTER 5

Discussion

The purpose of this study was to examine the possible usage of podcasting for educational applications. This examination included a serious look into the plausibility of utilizing podcasting applications for education, the effectiveness of podcasting as a flexible learning tool, and the reliability of the technology's positive student engagement. The results, after reviewing multiple studies, indicate that students that use podcasts of full-length lectures tested similarly to those who did not use podcasts. The data also suggests that students will overwhelmingly use podcasts inside pre-designated learning time frames, with no significant usage of the medium's flexibility provided by its inherently mobile nature. When students are engaged with podcasting through creative learning processes such as student made learning materials, a measurable increase in understanding of subject matter could be seen on examinations. Data also indicated that students with learning disabilities benefited from certain applications of podcasting in learning environments which were measurable. Student bodies, when surveyed in higher education environments, had overwhelmingly positive responses to the materials being made available.

The implication that students who listen to podcasts of lectures score similarly to students who did not is of major importance to this research paper. As reported by previous studies (McGarr, 2009; Kazlauska & Robinson, 2011; Kennedy, Deshler, & Lloyd, 2013; Pegrum, Bartle, & Longnecker, 2014), the result implies a possibility for dissemination of basic course materials which can then be expanded during traditional class time. This in theory, could also allow for learning experiences which require access to facilities such as laboratories, to increase student engagement with the hardware and equipment at hand. This practice may not be

applicable to every educational experience though, there was an indication that a significant number of students would rather attend lectures and read from textbooks without podcasting utilization (Kazlauska & Robinson, 2011).

The mobile nature of podcasting was a focus of the research questions posed, expected usage included student utilization of the mobile nature of podcasting to multitask. This explored idea included usage of podcasting for supplementary learning while on the move, at work, or as a study aid. Contradictory to the assumed usage, multiple studies showed that students would use podcasting during pre-designated learning times on a computer (Kazlauska & Robinson, 2011; O'Bannon, Lubke, Beard, & Britt, 2011). There seemed to be no significant indicated blurring between student learning times and any other time available to students. This impression of mobile usage and multitasking is likely due to the mobile nature of podcasting technology more than empirical evidence.

As reported by authors (Kennedy, Deshler, & Lloyd, 2013; Pegrum, Bartle, & Longnecker, 2014), there is a usage of podcasting outside of strictly lecture replacement and has been shown to reach students in other ways. Creative podcasting was shown to improve student test scores, understanding of the material, and student engagement with materials. Student engagement with learning materials unrelated directly to their major may be difficult to achieve, but creative podcasting may provide a valuable tool for teaching traditionally unengaged students core concepts. There is also a strong correlation between podcast usage and improved understanding of language in students who have learning disabilities (LD). These students with LD were shown to engage with learning materials more effectively when supplemented with podcasting. This finding implies alternative uses for podcasting in educational environments can be just as effective as traditional uses of podcasting in some cases.

The results of this study may have been influenced by physical restraints in travel and access to learning materials due to time limitations and external circumstances. The higher education learning dynamic was quickly adapted to accommodate rapid distance learning models in the middle of researching this study. Further, the current global pandemic occurring in 2020 has been extremely taxing as time frames which were expected for study, examination, and education have been adjusted to fit the aforementioned.

Further Study Possibilities

The results of this research paper infer that possible experimental podcast focused distance learning models are viable but untested in totality. Using serial series podcasts to replace lecture time of core concepts could be explored in future research. This would require parallel educational experiences modeled to supply the same information but with core concepts of the material being expanded on in face to face lectures with podcasting being utilized for core concept dissemination. A class held in parallel would be exposed to core concepts only in traditional learning models with testing comparisons and survey's to be conducted after the conclusion of both classes. Another possible avenue of future research is the utilization of podcasting focusing on students with disabilities and their response to the medium's utilization in reinforcing language concepts such as vocabulary. This aspect of previous studies was not expanded on enough to be considered conclusive.

Conclusion

In conclusion, there is a strong case for implementing podcast variations to numerous courses in a wide variety of learning environments. The most effective forms of podcasting implementation are situational, depending on the audience and material being covered. When working in language courses, hearing language seems to reinforce learning when working with

students who have LD. Another class which may benefit is when students may need to focus limited time periods on hardware instead of basic terminology. Lastly, in cases where a teacher may need extra motivational tools to engage a student body. There is no evidence that making podcasting of any pertinent information or lecture recording has been detrimental to the student body or would make students less likely to attend traditional classes. Podcasting is a tool, and when correctly utilized, it can help teachers get the work of educating students done better.

REFERENCES

- Copley, Jonathan. "Audio and Video Podcasts of Lectures for Campus-Based Students: Production and Evaluation of Student Use." *Innovations in Education and Teaching International*, vol. 44, no. 4, 2007, pp. 387–399., doi:10.1080/14703290701602805.
- Forbes, Dianne, and Elaine Khoo. "Voice over Distance: a Case of Podcasting for Learning in Online Teacher Education." *Distance Education*, vol. 36, no. 3, 2015, pp. 335–350., doi:10.1080/01587919.2015.1084074.
- "High School vs. College: Studying." *High School vs. College: Studying | Walter & Marie Williams STEPP Program*, www.stepp-program.org/family-modules/high-school-vs-college/studying.
- Kazlauskas, Alanah, and Kathy Robinson. "Podcasts Are Not for Everyone." *British Journal of Educational Technology*, vol. 43, no. 2, 2011, pp. 321–330., doi:10.1111/j.1467-8535.2010.01164.x.
- Kennedy, Michael J., et al. "Effects of Multimedia Vocabulary Instruction on Adolescents With Learning Disabilities." *Journal of Learning Disabilities*, vol. 48, no. 1, 2013, pp. 22–38., doi:10.1177/0022219413487406.
- McClung, Steven, and Kristine Johnson. "Examining the Motives of Podcast Users." *Journal of Radio & Audio Media*, vol. 17, no. 1, 2010, pp. 82–95., doi:10.1080/19376521003719391.
- McGarr, Oliver. "A Review of Podcasting in Higher Education: Its Influence on the Traditional Lecture." *Australasian Journal of Educational Technology*, vol. 25, no. 3, 2009, doi:10.14742/ajet.1136.
- O'Bannon, Blanche W., et al. "Using Podcasts to Replace Lecture: Effects on Student Achievement." *Computers & Education*, vol. 57, no. 3, 2011, pp. 1885–1892., doi:10.1016/j.compedu.2011.04.001.
- Pegrum, Mark, et al. "Can Creative Podcasting Promote Deep Learning? The Use of Podcasting for Learning Content in an Undergraduate Science Unit." *British Journal of Educational Technology*, vol. 46, no. 1, 2014, pp. 142–152., doi:10.1111/bjet.12133.
- Rosell-Aguilar, Fernando. "Top of the Pods—In Search of a Podcasting 'Podagogy' for Language Learning." *Computer Assisted Language Learning*, vol. 20, no. 5, 2007, pp. 471–492., doi:10.1080/09588220701746047.