

# Improving Learning Outcomes With Podcasting

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## Abstract

This study investigated supplemental podcasts as an effective teaching strategy to improve learning outcomes. Nursing Education Faculty need to utilize a variety of evidence based teaching strategies to meet the diverse learning styles of students. Intentional application of theory to practice can guide teaching and learning strategies. Anchoring podcasting to the underlying socio-cultural milieu of time constraints, stressors of multiple roles, and rigor of nursing curriculum is facilitated through Vygotsky's Cultural Historical Activity Theory. Using tools that are readily accessible, providing supplemental resources can enhance learning. Prior to a required end of course Assessment Technology Institute exam, students in an Accelerated Bachelor's of Science in Nursing program were provided a podcast reviewing key points from their ATI review book, explained with clinical examples. ATI test scores were compared between the students that listened to the podcast and those that did not. The analysis of variance was statistically significant at  $p \leq .05$  level,  $F(1, 29) = 8.462$ ,  $p = 0.007$ . A survey post exam demonstrated that 78% felt the podcasts increased their understanding of the course concepts.

## Background

The students of today come from a multitude of generational, historical, and cultural influences. Facing an increasingly complex health care environment, straddled with uncertainty and ambiguity, nursing education must meet the challenge of educating students to be safe, effective care providers. Students have choices in how they obtain their education, from time frame, type of degree, and learning environment. One avenue that has been growing exponentially is the Accelerated Bachelor's of Science in Nursing (ABS N) degree program. An accelerated bachelors of science in nursing program is very time intensive. The literature is replete with educational concerns related to this population, including experiencing high levels of stress, family obligations, and employment while in the program (Meyer, Hoover, & Maposa, 2006; Penprase & Koczara, 2009; Utley-Smith et al., 2007). As we educate students to become safe and effective nursing professionals, acquisition of cognitive skills in preparation for the NCLEXRN® is a critical component of the curriculum. MNU utilizes products and services provided by Assessment Technologies Institutes, Inc., a provider of technology-based educational, curriculum and assessment solutions. These tools are purported to facilitate nursing students in passing the NCLEXRN®.

## Purpose

Research is needed "to determine the impact of the mobile media revolution on instructional design and learning effectiveness" (Maag, 2006, p. 483). Although research related to podcasting in nursing education appears in the literature, the amount is minimal. This study will add to the body of research in this area, and has potential to promote podcasting as a viable, effective tool through increasing dissemination in support of student learning. There are advantages to educators and students from research on assessment of learning outcomes derived from the integration of instructional design and advanced technology.

## References

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## Research Questions and Hypotheses

A mixed methodology was used to answer the following research questions:

- *Question 1:* What is the effect of a supplemental podcast as a learning strategy on ABSN program students' ATI test scores?
  - H<sub>0</sub>: There is no difference in ABSN students' ATI test scores between students who have listened to supplemental podcast as a learning strategy and those that have not accessed the supplemental podcasts.
  - H<sub>a</sub>: There is a difference in ABSN students' ATI test scores between students who have listened to a supplemental podcast as a learning strategy and those that have not accessed the supplemental podcast.
- *Question 2:* How do students in an ABSN program perceive the value of learning through listening to podcasts?

## Methods

This mixed methods research incorporated a quasi-experimental study of ATI exam results between students that listened to a supplemental podcast test review prior to the exam, and those that chose not to access the podcast as a supplemental study aid. A survey was also administered post ATI exam on all students for collection of demographics, consisting of a 5 point Likert scale on perceptions of podcasting as a learning tool. Internal IRB approval was received, and informed consent was obtained from students. Participation was voluntary. Names were not included on the survey tool; students recorded whether or not they listened to the podcast, and provided their ATI scores on the tool.

A sample of convenience was used for participants, consisting of ABSN students enrolled concurrently in Nursing Research and Maternal-Newborn Nursing courses. There were 30 participants (N= 30). The study was explained to the students during a research class being taught by the principal investigator, and the voluntary aspect and anonymity of the surveys was stressed. Ethical standards of research with human subjects was presented to the students as part of their research course; students completed the Protecting Human Research Participants Tutorial produced by the NIH Office of Extramural Research.

## Results

Between-Subjects Factors			
	Value	Label	N
listened for ATI	1.00	yes	18
	2.00	no	12



Time to Learn



Statement	SD	D	N	A	SA
I would rather read the textbook than listen to a Podcast.	9 50%	4 22%	2 11%	3 17%	0 0%
I would rather study my notes than listen to the Podcast.	5 28%	4 22%	7 39%	2 11%	0 0%
I did not have time to listen to the Podcasts.	8 44%	6 33%	3 17%	0 0%	1 6%
The Podcasts increased my understanding of the course concepts.	0 0%	3 17%	1 6%	7 39%	7 39%
I felt listening to the podcasts was tedious and boring.	8 44%	5 28%	4 22%	1 6%	0 0%
Listening to the Podcasts was a waste of time.	7 39%	5 28%	6 33%	0 0%	0 0%
I wish other courses had Podcasts available.	0 0%	0 0%	1 6%	4 22%	13 72%
Listening to the Podcasts did not increase my learning of the concepts.	12 67%	3 17%	3 17%	2 0%	0 0%
Listening to the podcasts was time well spent.	0 0%	2 11%	6 33%	8 44%	2 11%
I enjoyed listening to the Podcasts.	0 0%	0 0%	4 22%	9 50%	5 28%

Survey Tool Results N = 18

SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree; M = Mean.

## ANOVA

### Tests of Between-Subjects Effects

Dependent Variable: ATI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	496.672 <sup>a</sup>	1	496.672	8.462	.007
Intercept	138522.464	1	138522.464	2360.111	.000
listATI	496.672	1	496.672	8.462	.007
Error	1643.409	28	58.693		
Total	149911.090	30			
Corrected Total	2140.082	29			

The analysis of variance was statistically significant at the  $p \leq .05$  level,  $F(1, 29) = 8.462$ ,  $p = 0.007$ ; reject the null hypothesis and accept the alternative hypothesis:

There is a difference in ABSN students' ATI test scores between students who have listened to a supplemental podcast as a learning strategy and those that have not accessed the supplemental podcast.

The Cohen's  $d$  calculated for effect size in this study is  $d = 1.09$ . Cohen's  $d$  is a statistic that can be greater than one, indicating the difference between the two means is larger than one standard deviation. The effect size in the Podcast study is large; the statistical literature reports many educational researchers identify effect sizes  $\geq 0.20$  to 0.25 as important related to academic achievement (Duriak, 2009; Valentine & Cooper, 2003).

## Discussion

Human beings have used listening as a primary method in the learning process for thousand of years, predating written forms of communication. In general, students in accelerated bachelor's nursing programs are adult learners who may benefit from flexibility within educational programs and creative teaching methods. Some students prefer learning through listening. There are many pedagogical benefits, including:

- Listening may motivate students who do not like reading.
- A single instructor with minimal institutional support can easily implement the use of these new technologies in their teaching.
- Educational podcasts can be distributed on course management systems, instructor websites, and public video websites such as YouTube.
- Podcasts allow students to interact with content at their convenience and may enhance learning.
- Instructors may benefit from recording repetitive explanations, descriptions, illustrations and connection of concepts.
- Spoken word can influence a learner's cognition (adding clarity and meaning) and motivation (by conveying directly a sense of the person creating those words).

## Conclusion

Theory supports addressing social, cultural, and emotional aspects that intertwine with the process of learning. Understanding the needs of the learners is a key educational principle. Incorporating podcasting follows best practice by providing learning materials in as many formats as possible, to suit individual students' learning styles" (Walmsley et al., 2009, p. 159). Podcasts utilizes the devices and technologies that surround our students, "in an attempt to empower and enrich their learning, wherever and whoever they are" (Stead, 2005, p.3). It takes "the learning to the learners when they have time to learn" (Stoten, 2007, p. 57).