



Podcasting acceptance on campus: The differing perspectives of teachers and students



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ABSTRACT

Combining the Web and mobile technology, podcasting can be an effective tool for mobile and electronic learning, as it provides a learning environment anytime and anywhere. This research investigated how the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Thong, & Xu, 2012) can be applied to study the adoption of podcasting in higher education. Specifically, it examined whether and how user type (teachers or students) may affect differently adoption patterns of podcasting for educational purposes. The key findings include that for intent to adopt podcasting, effort expectancy is more important to students than teachers, while facilitating conditions factors such as copyright clearance and technical support availability are more important to teachers than students. The overall results are expected to contribute to theoretical development and industrial practices in promoting the acceptance of podcasting for educational purposes.

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1. Introduction

Pedagogies are not static and need to evolve through time with innovative teaching and learning tools (Becker & Ravitz, 1999). Different pedagogical tools have been used throughout history to meet the goals of education. Books were created to capture knowledge in print and online games were developed to provide experiential learning experiences. Podcasting has become popular in the business (Gronstedt, 2007), personal, and educational domains (Molina, 2006). In higher education, podcasts enable students and teachers to share information without geographical or temporal limitation. Students can download the podcast of a recorded lesson for repeated learning at anytime from anywhere. It can be a tool for communicating curriculum, assignments and information with students, parents, alumni, and the general community.

In adopting podcasting for educational purposes, teachers and students may hold different perspectives and expectations for the technology. As teachers are on the supply side of the content and students are on the demand side, it is very plausible that teachers and students will exhibit different patterns of technology acceptance. Adopting computer technology to facilitate the delivery of educational content requires substantial changes in the curriculum, teaching practices, allocation of resources, and perhaps rearranging the fundamental structure of schools. With the need to invest more time and resources, teachers could become less enthusiastic about adopting computer technology than others (Zhao & Frank, 2003). Podcasting as a teaching tool likely won't be an exception. By contrast, students likely play a less active role than teachers, as resources needed to invest on the adoption of podcasting are relatively minimal for them. Teachers also are likely to be older than students. According to the Unified Theory of Acceptance and Use of Technology (UTAUT & UTAUT2), age and gender can also play a moderating role in technology acceptance (Venkatesh, Morris, Davis, & Davis, 2003, Venkatesh et al., 2012). However, the role of age relative to other factors such as experience or self-efficacy has been called into question when referring to technology acceptance (Helsper & Eynon, 2010; Selwyn, 2009). Therefore, the chance for teachers and students to differ in the pattern of technology acceptance cannot be overlooked.

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To unveil various adoption patterns for a new technology, we raised our research question: how teachers and students would exhibit different patterns of adopting podcasts for educational tasks. We examined how the importance of the contributing factors to intention to adopt podcasting may vary and how the causal relationships among these factors may differ, depending on the roles of teachers or students. The answer to our question will not only extend the theoretical literature of technology acceptance by presenting a refined technology acceptance model, but also help devise intervention guidelines and generate impacts on practice.

2. Literature review and theory

2.1. Podcasting for educational purposes

Harris and Park (2008) developed a typology of four educational podcasting drivers based on usage characteristics. The teaching-driven usage includes augmenting teaching (e.g., providing lecture content and repeating or summarizing lectures), student assignments as part of coursework, and supplemental research publications as a means for students to present their research papers. The service-driven usage includes delivering information pertaining to overall educational context (e.g., university, departmental, industry) as opposed to teaching-subject relevant materials. The marketing-driven usage concerns about the educational institution recruiting prospective students. The technology-driven usage supports general teaching practices.

McGarr (2009) identified three types of teaching-driven podcast usage: substitutional, supplemental, and creative. In the substitutional use, students use podcasts mostly for reviewing the lectures they have previously attended. The supplemental use is for instructors to provide additional materials to broaden and deepen students' understanding. The creative use is for instructors to encourage or mandate students generating podcasts as part of course requirements.

Of the three teaching-driven usages, supplemental use is particularly better received than substitutional use (Fernandez, Simo, & Sallan, 2009). Bongey, Cizaldo, and Kalnbach (2006) also found that podcasting complements both teaching and learning in the traditional classroom setting. Similarly, Evans (2008) concluded that podcasting seems to have significant potential as an innovative learning tool for adult learners in higher education because it provides the flexibility in when, where, and how learning can occur.

While podcasting does not necessarily help achieve a higher academic performance (Heilesen, 2010; O'Bannon, Lubke, Beard, & Britt, 2011), it does have a positive impact on academic environment in many different ways. Podcasting has been found to open up experiments with pedagogy (Fernandez et al., 2009; Heilesen, 2010), stimulate both individual and collective learning with content sharing (Lee, Kozar, & Laresen, 2007), contribute to deeper learning and greater satisfaction (Lakhal, Khechine, & Pascot, 2007), and increase students' motivations (Fernandez et al., 2009).

Cautionary tales on the effectiveness of educational podcasting have also been asserted. Walls et al. (2010) discovered that students may not be as ready or eager to use podcasting for repetitive or supplemental educational purposes. O'Bannon et al. (2011) found that the barriers to podcasting adoption include unfamiliarity, technical problems, and not seeing its relevance. McGarr (2009) noted, "future use of these technologies should be learner led, rather than technology led" and that ultimately, the effectiveness of podcasting for educational purposes lies in the perception of podcasting by all stakeholders, including the institution, teachers, and students as well as the appropriateness of pedagogies employed in these contexts.

Relatively few studies have differentiated the podcasting usage patterns between teachers and students; however, Lonn and Teasley (2009) found that while both instructors and students agree that podcasts help students learn, students are less sure about whether podcasts improve instructors' teaching. Our study will further explore how teachers and students differ in the factors affecting intention to use podcasting for educational purposes and the causal relationships by utilizing the Unified Theory of Acceptance and Use of Technology as the theoretical lens to view podcasting usage in both the student and instructor populations.

2.2. The UTAUT model

Recognizing how teachers and students can vary behaviorally in adopting podcasting for educational purposes, this paper draws its theoretical model based on the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003, 2012) to study the variation of acceptance of podcasting between teachers and students. The UTAUT model is an evolved version of the Technology Acceptance Model (TAM) (Davis, 1989). The UTAUT model aims to integrate the multitude of variations and extensions to TAM that subsequent research has developed (Venkatesh et al., 2003). Many of these subsequent studies incorporated external variables such as antecedents or moderators to the core constructs in TAM, as shown in Fig. 1.

The TAM and UTAUT models have been applied to study the technology innovation for supporting higher education, including the following applications: Web-based course management system (Martins & Kellermanns, 2004), PowerPoint presentations (Hu, Clark, & Ma, 2003), and Web-based learning (Chiu & Wang, 2008).

Moreover, the UTAUT model was tested and found to outperform eight other well-known technology acceptance models in explaining the variance in user intention to use new technology, including TAM (Venkatesh et al., 2003). The UTAUT model compared and grouped the core antecedents to intention to use new technologies in these eight models, proposing four major antecedents in its own model. The main dependent variables in the UTAUT model are behavioral intention (BI) and use behavior. BI is similar to the "intention to use" construct put forth in Davis's (1989) TAM model. The main antecedents to BI include performance expectancy, effort expectancy, social influence, and facilitating conditions.

These facts together seem to suggest that the UTAUT model would be appropriate to study the acceptance of podcasting in a higher education setting. Most TAM or UTAUT research focuses on single-group users, as the goal of this line of inquiry is to test the relationships among the constructs in the model for a new technology and to extend the findings to the general population. An implicit assumption in many of these studies is that the users of the new technology will exhibit the same patterns of psychological, attitudinal and behavioral effects regardless of their individual differences (e.g., age, gender, personality). When individual differences are incorporated into the extended TAM or UTAUT models as antecedents to the three core constructs (i.e., perceived ease of use, perceived usefulness and intention to

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