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| RESEARCH ARTICLE

Exploring Students' Perceptions of Podcasts as a Complementary Educational Tool: Insights from the Technology Acceptance Model

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| ABSTRACT

This research investigates the perceptions of Master's students at Sidi Mohamed Ben Abdellah University (Fes, Morocco) regarding the use of podcasts as an educational tool. It employs the Technology Acceptance Model (TAM) to examine factors affecting their intention to use such technologies. This study adopts the quantitative approach, using surveys to collect data from 95 participants enrolled in four programs in the English department. The analysis consists of exploring existing relationships between Attitude, Perceived Usefulness, Perceived Ease of Use, and Intention to use podcasts as a supplementary learning tool. The results demonstrate that Perceived usefulness and Perceived Ease of Use are key determinants of the Intention to use this technology, highlighting the mediating role of Attitude. The findings also highlight the need for further research within the scope of technology acceptance and implementation in the Moroccan educational system.

| KEYWORDS

Technology Acceptance, Higher Education, Technology, Attitudes

| ARTICLE INFORMATION

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1. Introduction

During the pandemic, the Moroccan government has implemented distance learning as a cautionary measure. Since then, the adoption of learning technology has been evident, however, effective exploitation of mobile learning technologies such as podcasts as an educational tool remains absent. Podcasting is somewhat new to information technology. The latter consists of audio/video files pertinent to a certain theme. These files are either downloaded on an online platform or directly sent to users. The uses of this auditory technology vary across many fields, which Vogele and Gard (2006) categorize into three. Administrative use includes institutional updates/information; special lecture usually comes in the form of a lecture or discussion; and classroom use entails a lesson structure of the content. This article concerns itself with the second, as the use of podcasts within higher education is the main focus. Podcasts can be utilized as a push technology (Evans, 2008). As opposed to pull technology, push technology refers to a method of data delivery based on disseminating information to users without their asking for it (instant messaging, notifications...). Thus, "*With push-based delivery, the server initiates the transfer*." (Franklin & Zdonik, 1998, p. 517), allowing for a wider audience reach.

2. Podcasts as an Educational Tool

Pedagogical advances have long advocated for constructivist models of education. McLoughlin & Lee (2008) have highlighted the importance of including active learning techniques in any learning process. Active learning is defined as any learning activity that involves the learner in the process (Bonwell & Eison, 1991). In other words, learners are no longer just recipients of information but are also agents of their learning process. This can be done through the use of podcasts as a self-study tool with additional material for the learner, as well as involving students in the making process of these podcasts. The effect of the latter on the effectiveness of learning is yet to be statistically significant, however, it is considered to be a creative supplement to the course material (Lazzari, 2009). The benefits of podcasts also range from flexibility, the ability to pause and replay, connectedness, and many more (Keegan (1996), Clark and Walsh (2004), Dron (2006), Lee & Tynan (2008)). Podcasts can also serve as a revision tool, higher education students perceive revision from podcasts more positively than that from textbooks (Evans, 2008). Concerning the Moroccan context, podcasts have yet to be utilized as supplementary educational tools, especially in the case of public higher education institutions. This provides a great opportunity for both educational research and policy, as investigating how students' attitudes may affect their intention of using such technologies can allow for effective technology use on the educational level.

3. Theoretical Background

Attitude can be a complex concept to define, as many scholars focus on different elements in their definitions. Bohner and Dickel (2011) relate it to the assessment of a particular item. Ajzen (1993), on the other hand, expanded his definition of attitude to focus on the individual's positive or negative perceptions of the world around him/her. The Theory of Reasoned Action (Fishbein and Ajzen, 1975) is among the first to discuss the construct of attitude and advance its measurements. The creation of attitudes is largely based on attribution (Ajzen, 1993). The latter entails linking the item in question with other items, previous experience, beliefs… Attitudes can also be created based on others' attitudes, this idea was also discussed by the Theory of Planned Behavior (Ajzen, 1991). Recent research on this account applies the Technology Acceptance Model (TAM) which posits that perceived usefulness and perceived ease of use directly influence the intention to use technology. Perceived usefulness (PU) entails how a particular technology is regarded as convenient and useful, whereas perceived ease (PE) of use is the degree of difficulty of the use of that technology (Davis, 1989). The relationships between these variables are demonstrated in figure (1).

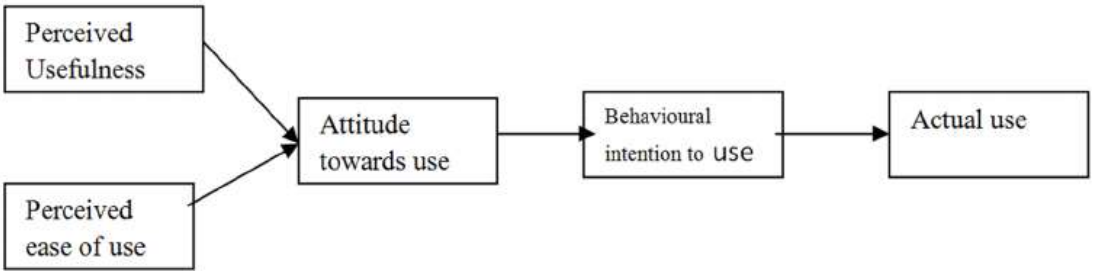

Figure 1: The original technology acceptance model TAM (Davis, 1989)

4. Research Model, Design and Hypotheses

The additional value of podcasts may be evident, but students' intentions to use them as a complementary educational tool remains in need of investigation. It is important to note that this work aims to investigate the preconceived perceptions of the participants towards this technology before its implementation. The technology acceptance model, as its name suggests, is tailored to investigate factors that affect the use of technology. As previously mentioned, it identifies two main determinants of user behavior: perceived usefulness and perceived ease of use. This model has gained a substantial amount of support and attention within this field of study, focusing on both students and teachers (Sánchez-Prieto et al., 2017). This study focuses on students, as they are the primary users of educational technology. Therefore, 95 students were randomly selected from the University of Sidi Mohamed Ben Abdellah. The participants were given a 5-Likert scale questionnaire based on (Davis, 1986, and Davis, 1989), with a minor modification to suit the sample in question. Such modification concerns the investigation of actual use, which is not considered for conciseness and methodological purposes.

4.1 *Research questions*

1. Do attitudes impact students' intentions to use podcasts?
2. Does perceived ease of use have a positive effect on behavioral intention through attitude?

3. Does perceived usefulness have a positive effect on behavioral intention through attitude?

4.2 *Hypotheses*

H1: Attitude has a significant positive effect on students' intention to use podcasts.

H2: Perceived ease of use has a positive effect on behavioral intention through attitude

H3: Perceived usefulness has a positive effect on behavioral intention through attitude

4.3 *Research Design*

This research investigates the perceptions of Sidi Mohamed Ben Abdellah Master students regarding the use of Podcasts as a complimentary educational tool. It applies the Technology Acceptance Model (TAM) to analyze the role of key factors (Attitude, Perceived Usefulness, and Perceived Ease of Use) in influencing students' intentions to use Podcasts in their educational journey. The study was conducted within the quantitative framework as it employed surveys in the data collection, using random sampling from 115 participants, out of which 95 were complete. The latter are enrolled in 4 different programs: Language, Communication and Society, Gender studies, Cultural studies, and Applied linguistics. Due to the lack of response rate online, the questionnaires were administered personally and analyzed through the Statistical Package for Social Sciences (SPSS).

5. Results

5.1 Reliability

As demonstrated in Table 1, Cronbach's Alpha was administered to ensure the reliability of the constructs used in this study. The values vary between 0.836 and 0.867, suggesting acceptable internal consistency, thus indicating the scale used for measurement is reliable. On the item level, the standard deviation values vary. While consistent for Attitude (ranging between 0.756 to 1.032, it demonstrates more variability for Perceived Ease of Use (from 0.898 to 1.192, and moderate variability for Perceived Usefulness and Intention (0.785 to 1.220). Overall, this analysis highlights the reliability and variability of the measures and constructs.

Table 1: Reliability and Item Means for Constructs

Construct	Cronbach's Alpha	N of Items	Item	Mean	Standard Deviation	N
Attitude (AT)	0.867	6	AT1	1.80	0.820	95
			AT2	1.84	0.829	95
			AT3	1.88	0.756	95
			AT4	1.99	0.917	95
			AT5	1.85	0.812	95
			AT6	2.09	1.032	95
Intention (INT)	0.836	5	INT1	2.55	1.128	95
			INT2	2.64	1.220	95
			INT3	2.42	1.107	95
			INT4	2.48	1.110	95
			INT5	2.38	1.122	95
Perceived Usefulness (PU)	0.863	5	PU1	2.26	0.970	95
			PU2	2.21	0.862	95

Construct	Cronbach's Alpha	N of Items	Item	Mean	Standard Deviation	N
			PU3	2.34	1.006	95
			PU4	2.15	0.863	95
			PU5	1.85	0.785	95
Perceived Ease of Use (PEU)	0.836	7	PEU1	2.06	1.192	95
			PEU2	2.02	0.934	95
			PEU3	2.20	0.952	95
			PEU4	2.21	0.898	95
			PEU5	2.08	0.907	95
			PEU6	2.38	0.947	95
			PEU7	3.00	1.011	95

5.2 Correlation

As highlighted in Table 2, this study examines the correlations between Attitude (AT), Perceived Ease of Use (PEU), Perceived Usefulness (PU) and Intention (IT). The latter shows a significant positive correlation between Attitude and Intention ($r=0.698$, $p < 0.01$). This entails that as students are more favorable towards the use of podcasts as supplementary educational tools, the more likely they are to use them. This highlights the importance of fostering positive attitudes when introducing new technology in the educational context.

Additionally, Perceived Ease of Use also shows a significant positive relationship with Intention ($r=5.98$, $p < 0.01$). This indicates that the more students view Podcasts as easy to operate, the more likely they are to use them in their learning. It is also important to note that Attitude and Perceived Ease of Use are also positively correlated ($r=0.676$, $p < 0.01$), indicating the potential mediating effect of Attitude.

The relationship between Perceived Usefulness and Intention also shows a positive correlation ($r=0.677$, $p < 0.01$), which implies that the more useful students perceive podcasts to be useful for their learning and academic performance, the more likely they are to use them. Moreover, Attitude and Perceived Usefulness also demonstrate a significant correlation ($r=0.707$, $p < 0.01$), suggesting a mediating effect. This means that if students believe that Podcasts are useful, they will consequently develop positive attitudes towards them, thus increasing their intentions.

Table 2: Correlations between Constructs

		AT_score	Int_score	PU_score	PEU_score
AT_score	**Pearson Correlation** **1**	.698**	.707**	.676**	
	Sig. (2-tailed)	.000	.000	.000	
	N **95**	95	95	95	
Int_score	**Pearson Correlation**	.698**	1	.677**	.598**
	Sig. (2-tailed)	.000		.000	.000
	N	95	95	95	95
PU_score	**Pearson Correlation**	.707**	.677**	1	.731**

	Sig. (2-tailed)	.000	.000		.000
	N	95	95	95	95
PEU_score	**Pearson Correlation**	.676**	.598**	.731**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	95	95	95	95

**. Correlation is significant at the 0.01 level (2-tailed).

5.3 Hypotheses Testing and Regression Analysis

Table 3: Hypotheses testing

Hypothesis	Path	R^2	Coefficient	T-test	p-value	Status
H1	Attitude (AT) → Intention (INT)	0.557	0.652	11.26	0.000	**Supported**
H2	Perceived Ease of Use (PEU) → Attitude (AT) → Intention (INT)	0.628	0.901	15.97	0.000	**Supported**
H3	Perceived Usefulness (PU) → Attitude (AT) → Intention (INT)	0.457	0.652	11.26	0.000	**Supported**

Multiple regression and path analyses were employed to investigate the relationships between the constructs further. H1 proposes a positive effect of Attitude on intentions, which the findings support (coefficient of 0.652). The value R^2=0.557 highlights that Attitude explains 55.7% of the variance. As the correlation analysis showcased, the more positive students' attitudes are the more likely they are to use Podcasts for their learning. On the other hand, 62.8% of the variance is explained by Perceived Ease of Use, which is mediated by Attitude. The 0.901 coefficient, T-test =15.97, and $p < 0.05$ further support the significant effect of PEU on intention, thus, supporting H2. Finally, the R^2= 0.457, suggests that 45.7% of the variance is explained by Perceived Usefulness, which is also mediated by Attitude. The statistical significance of this path is supported by T-test value (11.26) and p-value (< 0.05). This analysis supports H3 and highlights the moderate positive effect of Perceived Usefulness on Intention through Attitude.

6. Discussion and Conclusion

This research aims to investigate the Master students' perceptions regarding the use of Podcasts as a supplementary educational tool at Sidi Mohamed Ben Abdellah University, using Davis' (1989) TAM model. The study's findings highlight the statistically significant relationship between Perceived Usefulness (PU) and Intention (INT) to use podcasts. This is consistent with earlier studies adopting the same model. It also highlights the varying levels of Perceived Usefulness (mean=1.85) which suggests that although students might view Podcasts as useful, they might not see them as essential. This is important for professors and institutions to consider, as technologies such as Podcasts can be utilized to encourage and implement collaborative work and communication skills. Additionally, Perceived Ease of Use emerges as a key factor influencing the intention to use Podcasts for learning. With the implementation of any new technology in the educational context, it is crucial to provide accessibility to technical support and training for students. As the findings demonstrate, the more students understand and can operate a technology, the more likely they are to use it to enhance their learning and academic performance. It is also important to note that this research showcases the essential mediating role of Attitude (AT). Thus, educational institutions should consider fostering positive attitudes towards technology in general before any implementation. While this study provides insights into students' perceptions, the sample was drawn from one university, which limits the findings' generalizability. Further research and diverse samples are still needed to further investigate the model's validity within the Moroccan educational context. overall, the findings emphasize the need to enhance perceived benefits, technical support, and attitudes regarding the implementation of technology in education. Through the consideration of these factors, institutions can effectively adopt various types of technology and utilize them to their full potential.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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