

TESOL TEACHERS' ATTITUDES TOWARD LEARNING MANAGEMENT SYSTEMS IN ONLINE TEACHING IN ALABAMA AND MISSISSIPPI

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As online education continues to evolve and create new opportunities for educators to deliver quality instruction, universities are challenged with the range of learning management systems (LMSs) that can serve the educational needs of both universities and teachers. This quantitative study examined teaching English to speakers of other languages (TESOL) or English as a second language (ESL) teachers' perceptions about LMSs in online teaching. The study used survey design and Rogers' (2003) theory of diffusion of innovation to measure the perceptions of teachers following relative advantage, compatibility, trialability, observability, and complexity. The findings explained the factors influencing the adoption process.

INTRODUCTION

Higher education has known unprecedented shift in teaching and learning over the last decade. The pervasive use of technology in education has increased the need of educational providers to adopt innovative teaching strategies and tools, including a learning management system (LMS) that meets their needs. According to Simonson (2007), "course management systems, also called learning management systems or virtual learning environments,

are software systems designed to assist in the management of educational courses for students, especially by helping teachers and learners with course administration" (p. vii). Higher education has undergone an increase in the use of LMSs (Chung et al., 2013). As a result, many organizations, academic institutions and businesses are using them (Fenton, 2018). The LMS is also used as a support and an information technology resource for face-to-face instruction delivery (Coates et al., 2005), blended instruction, virtual training,

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and remote teaching (Dahlstrom et al., 2014). Additionally, the LMS market is expected to reach \$325 billion by 2025 (Markets, 2017).

English as a second language (ESL) and teaching English to speakers of other languages (TESOL) teachers are aware of how the LMS, as a core technology, supports effective language learning (Beckford & Mugisa, 2014). Historically, ESL teachers have always infused contemporary innovations into their teaching. English language teaching has had a nonlinear evolution that was shaped by the economic and social needs of the time. Canagarajah (2015) explained that English language teaching has been going for centuries before the field needed to institutionalize TESOL and argued that each development phase was determined by different socioeconomic conditions of the time. The first phase, which started around the 1500s, was characterized by the need for practical instructional methods to teach nonnative English learners. The second phase, which started with the era of modernism, was characterized by a need to reframe the idea of TESOL according to the underpinnings of the modernist philosophy. Teaching English in the modernist era followed a systematic approach to language that has been problematized by postmodernists in the third phase. According to Harrison (1990), the learner's behavior in the language classroom is conditioned by who they are, the beliefs they hold, and the communities they belong to (Finch, 2006). The three historical English language teaching phases of development were all innovative and required that teachers adhere to the change happening in the profession. The pressing needs for a professional organization that would be permanently devoted to the problems of teaching English to nonnatives of all levels came with several responsibilities that were added to the role of the ESL teacher (Varghese & Jenkins, 2007). ESL teachers were required to carry out innovations in order to improve their teaching and answer the needs of the new population of English language learners (De Lano et al., 1994).

The introduction of new technologies allowed teachers to use innovative systems in teaching English, which consolidate instruction and prepare teachers to connect with learners (Alqahtani, 2019). The LMS as an innovation, therefore, has evolved into a platform environment that supports synchronous and asynchronous course delivery supporting numerous teaching tools that facilitate communication, organization of contents, student evaluation, and course delivery. LMSs grow into efficient integrated systems to manage the educational process, and they allow keeping track of students' learning, grading, communication, scheduling, and course registration (Cavus, 2011). The LMS environment offers a virtual medium to establish faster communication among teachers and students (Dahlstrom et al., 2014). When implementing a new technology mainly related to the LMS, it is crucial to understand the value and the perceptions of the innovation by instructors, faculty, or teachers because they are the primary pedagogical decision-makers in their classrooms (Kane et al., 2002). Faculty are the primary users of face-to-face and online teaching features provided by a LMS; and in traditional learning environments, teachers can gain insight into how students learn. Yet, the LMS setting creates some challenges for teachers to understand learning interaction (Graf et al., 2009). It is therefore essential to understand teachers' perceptions and attitudes toward a LMS as an innovation for a better integrated use (Asiri et al., 2012).

It is challenging when teachers are called to embrace technology and adopt a LMS for their instruction without being consulted about the compatibility of the innovation with their teaching objectives, a situation that often creates a divide between pedagogical and technological interests (McLain, 2017). Hence, it is central to understand the influence of the factors that can satisfy diverse needs in teaching and encourage the incremental adoption of LMSs by teachers of online TESOL (Almarashdeh, 2016). The desired outcome of this study was teachers' perceptions of LMSs

in a TESOL or ESL context. In order to update their toolkits, universities purchase LMS packages to maintain the best practices of keeping institutions technologically up to date. However, the costs of these new systems are high, and it is often difficult to monitor how they impact users. Assessing teachers' perceptions toward the use of LMSs is relevant for TESOL/ESL teachers due to the diverse nature of English language learners who require learning a foreign language for educational purposes.

For this research study, the theoretical underpinning was drawn from Everett Rogers' (2003) *Diffusion of Innovation*. In order to understand teachers' attitudes toward LMSs, this work relied on Rogers' (2003) theory that states that the adoption of an innovation is based on the adopters' perceptions of five major attributes that determine the rate of adoption of an innovation: relative advantage, compatibility, complexity, trialability, and observability. In general, "the characteristics of innovations, as perceived by individuals, help to explain their different rates of adoption" (Rogers, 2003, p. 15).

Relative advantage is "the degree to which an innovation is perceived as being better than the idea it supersedes" (Rogers, 2003, p. 15) and is expressed in terms of economic benefit. Compatibility occurs when innovations are compatible with past experiences or ideas and is defined as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (Rogers, 2003, p. 240). Observability is "the degree to which the results of an innovation are visible to others" (Rogers, 2003, p. 16). Observability is another characteristic that is positively associated with the rate of adoption of an innovation besides relative advantage and compatibility. Complexity is "the degree to which an innovation is perceived as difficult to understand and use" (Rogers, 2003, p. 16). Individuals tend to reject adopting innovations which are perceived to be complex to use or understand. Perceptions of complexity can lead an individ-

ual to believe the costs of adoption will exceed the anticipated benefits. Complexity is the most common factor that serves as a limiting factor for diffusion of innovations (Rogers, 1995). Trialability is "the degree to which an innovation may be experimented with on a limited basis" (Rogers, 2003, p. 16). Rogers (2003) also argued that trialability has been proven to be directly linked to the rate of adoption of an innovation. The adopters are more likely to develop a positive perception of an innovation when they can try it over a limited amount of time.

PURPOSE

The purpose of this study was to determine TESOL/ESL teachers' perceptions of LMSs. The specific objective was to measure TESOL/ESL teachers' perceptions of LMSs based on Rogers' (2003) characteristics of innovation: complexity, trialability, relative advantage, observability, and compatibility.

METHODS

This study followed a quantitative design that is descriptive in nature. Descriptive research is significant in education because it involves assembling detailed descriptions of educational phenomena (Gall et al., 2003). Also, Gall et al. (2003) suggested that descriptive methods are more effective in describing and interpreting the beliefs people hold regarding some issues. Cross-sectional survey design is convenient and commonly used in the field of education. This cross-sectional research design showed TESOL teachers' perceptions and factors related to their views of LMSs at a precise point in time (Levy, 2006).

The target population in this study were the faculty and teachers of ESL or TESOL in the states of Alabama and Mississippi. TESOL also comprises terms describing the areas of education: Teaching English as a foreign language and Teaching English as a Second Language. Based on that, TESOL and ESL

teachers may choose several pathways for their professional careers. TESOL teachers are part of the communities of practice, adult educators, ESL teachers, and intensive English programs' full-time and part-time instructors. Part of the mission of Alabama-Mississippi Teaching English to Speakers of Other Languages (AMTESOL) Association is to provide relevant information of ESL and "promote programs in communities that will improve the teaching of English as a second language at all levels of education" (AMTESOL, 2019, Mission section).

A nonprobabilistic purposeful sampling was used in the selection of participants for this study. The board of the AMTESOL Association approved access to this population. As reported by the AMTESOL Association, the total population of AMTESOL teachers was 400 (L. Preston, personal communication, May 14, 2019). To calculate the sample size ($n = 99$), Cochran's (1977) formula was used for the study.

An online questionnaire was used to collect data. Questionnaires have several advantages, such as including the cost and the ease of analysis (McPeake et al., 2013). The instrument was based on research by Harder and Lindner (2007) which studied the diffusion of eXtension among the Cooperative Extension agents in the state of Texas (Harder, 2007; Li & Lindner, 2007). Their instrument was previously used in a variety of contexts to measure the perceptions of participants when adopting innovations in the field of agriculture. The instrument included 25 questions and 53 items in total without demographic information, and four sections (i.e., stages in the adoption of LMSs, characteristics influencing the diffusion of the innovation, potential barriers to the diffusion, and TESOL teachers' individual characteristics/demographics). To understand the attributes of LMS, Rogers (2003) classified the characteristics of innovation into five categories: relative advantage, compatibility, observability, trialability and complexity. Participants were asked to rate 25 items utilizing a 5-point Likert scale, where 1 = *strongly disagree*, 2 =

disagree, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*.

FINDINGS

The findings presented in this article are part of a larger study conducted to examine the influence of selected factors on the adoption of LMSs among TESOL/ESL teachers in the states of Alabama and Mississippi.

Perceived Characteristics of Learning Management System

The objective of this study was to describe ESL/TESOL teachers' perceptions of LMSs based on Rogers' (2003) characteristics of an innovation (relative advantage, compatibility, observability, complexity, and trialability). Participants responded to a 5-point scale, where 1 to 1.5 = *strongly disagree*, 1.51 to 2.5 = *disagree*, 2.5 to 3.5 = *neither agree nor disagree*, 3.51 to 4.5 = *agree*, and 4.51 to 5.0 = *strongly disagree*. TESOL/ESL teachers tended to agree with the existence of complexity in using a LMS ($M = 4.07$ and $SD = 0.63$). They agreed that a LMS was compatible with their values and beliefs ($M = 3.86$ and $SD = 0.77$), had a relative advantage ($M = 3.76$; $SD = 0.77$), was observable ($M = 3.68$ and $SD = 0.88$), and was trialable ($M = 3.64$ and $SD = 0.82$).

Relative Advantage

The perceived relative advantage of a LMS was measured by participants' responses to six statements. Frequencies and percentages were used to describe the results. As shown in Table 1, approximately 54% of participants agreed or strongly agreed that a LMS can make their class more popular, approximately 80% of participants agreed or strongly agreed that a LMS could give access to more teaching contents, approximately 40% of participants agreed or strongly agreed that a LMS can create more funding opportunities for TESOL, and approx-

TABLE 1

Distribution of Participating ESL/TESOL Teachers by Their Perception About Relative Advantage of Using LMSs

Relative Advantage Items	n	SD		D		NA/D		A		SA	
		f	%	f	%	f	%	f	%	f	%
A LMS increases the accessibility of TESOL contents	99	1	1.0	2	2.0	18	18.2	48	48.5	30	30.3
I envision delivering information faster by using a LMSs as a software	99	2	2.0	10	10.1	18	18.2	24	27	32	32.3
A LMS provides teachers with more time to serve students	98	4	4.1	16	16.3	24	24.5	34	34.7	20	20.4
My class will become more popular due to the addition of a LMS	99	2	2.0	9	9.1	35	35.4	26	26.3	27	27.3
I envision spending less time by referring students to a LMS	98	9	9.2	21	21.4	18	18.4	36	36.7	14	14.3
A LMS creates more funding opportunities for TESOL	99	3	3.0	8	8.1	49	49.5	24	24.2	15	15.2

Note: Scale: 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. n = 99.

imately 50% showed a more neutral attitude. Fifty-one percent of participants agreed or strongly agreed that they envision spending less time when they refer their students to LMSs. Fifty-five percent of participants agreed or strongly agreed that a LMS provides them as teachers with more time to help their students, and approximately 25% showed a neutral attitude toward this statement. About 70% of participants agreed or strongly agreed that a LMS can allow them to deliver information at a faster pace and 18% had a neutral attitude toward this question. ESL/TESOL teachers tended to agree with the existence of the relative advantage of LMSs.

Compatibility

The perceived compatibility of a LMS was measured by participants' responses to six statements. Frequencies and percentages were used to describe the results. This was a 5-point Likert scale, where 1 = *strongly disagree*, 2

= *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. As shown in Table 2, approximately 65% of participants agreed or strongly agreed that a LMS can support the mission of TESOL teaching. Almost 80% of participants agreed or strongly agreed that a LMS is an acceptable way for TESOL teachers to deliver class content, and only 15 participants showed a neutral attitude toward this statement. Over 70% of participants agreed or strongly agreed that a LMS allowed them to deliver class contents depending on students' needs, over 75% of participants agreed or strongly agreed that a LMS provided useful information to the students, and 60% of participants agreed or strongly agreed that a LMS is compatible with their needs to cultivate sustainable relationships in class. Approximately 70% of participants agreed or strongly agreed that their future vision of a LMS includes LMS. ESL/TESOL teachers tended to agree with the existence of compatibility when using a LMS.

TABLE 2*Distribution of Participating ESL/TESOL Teachers by Their Perception About Compatibility of Using a LMS*

Compatibility Items	n	SD		D		NA/D		A		SA	
		f	%	f	%	f	%	f	%	f	%
A LMS is an acceptable way for TESOL teachers to deliver class content	99	3	3.0	2	2.0	15	15.2	49	49.5	30	30.3
A LMS provides useful information to the students	99	1	1	1	1	21	21.2	44	44.4	32	32.3
A LMS will allow me to deliver class content based on student's needs	99	2	2.0	3	3.0	22	22.2	47	47.5	25	25.3
My vision for the future of TESOL includes a LMS	98	2	2.0	6	6.1	22	22.4	44	44.9	24	24.5
A LMS can be useful to cultivate sustainable relationships in class	98	6	6.1	8	8.2	25	25.5	44	44.9	15	15.3
A LMS supports the mission of TESOL teaching	99	4	4.0	2	2.0	29	29.3	39	39.4	25	25.3

Note: Scale: 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. n = 99.

TABLE 3*Distribution of Participating ESL/TESOL Teachers by Their Perception About Complexity of Using a LMS*

Complexity Items	n	SD		D		NA/D		A		SA	
		f	%	f	%	f	%	f	%	f	%
I am comfortable using computers	97	1	1.0	3	3.1	4	4.1	34	35.1	55	56.7
Accessing online information is easy	98	1	1.0	2	2.0	7	7.1	53	54.1	35	35.7
I am good at looking for information	98	0	0	5	5.1	14	14.3	44	44.9	35	35.7
I can download from a LMS	98	1	1.0	13	13.3	23	23.5	43	43.9	18	18.4
Using a LMS is a simple task for me	98	1	1.0	13	13.3	23	23.5	43	43.9	18	18.4

Note: Scale: 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. n ≠ 99 due to nonresponses.

Complexity

The perceived complexity of a LMS was measured by participants' responses to six statements. Frequencies and percentages were used to describe the results. This was a 5-point Likert scale, where 1 = *strongly disagree*, 2 =

disagree, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. As Table 3 shows, about 73% of participants agreed or strongly agreed that a LMS is user-friendly. Sixty-two percent of participants agreed or strongly agreed that a LMS is simple to use, almost 90% of participants agreed or strongly agreed

that accessing resources in the online format was easier for them, over 86% of participants agreed or strongly agreed that they were good at navigating the online platform to find information, 80% of participants agreed or strongly agreed that downloading information through a LMS was not complicated, and 92% of participants agreed or strongly agreed that they were comfortable using the computer. ESL/ TESOL teachers agreed with the existence of complexity in using a LMS.

Trialability

The perceived trialability of a LMS was measured by participants' responses to four items. Frequencies and percentages were used to describe the results using a 5-point Likert scale, where 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. As Table 4 describes, about 67 of participants agreed or strongly agreed that they can select the features they wanted in a LMS. Approximately 64% can define the term of their use of a LMS, almost 60% of participants agreed or strongly agreed that they can try key features of a LMS without having to use a LMS in the future, and over 50% of participants agreed or strongly agreed that they can use a LMS without having to commit to creating new materials. ESL/ TESOL teachers tended to agree with the existence of trialability in a LMS.

Observability

The perceived observability of a LMS was measured by participants' responses to three statements. Frequencies and percentages are used to describe the results. On a 5-point Likert scale, where 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree*. As Table 5 shows, 56% of participants agreed or strongly agreed that LMS software was well publicized, 65% of participants agreed or strongly agreed that LMS was highly visible to them, and about 58% of participants agreed or strongly agreed that they should be able to identify people who are involved in a LMS. Overall, the mean and standard deviation for the perceived observability of a LMS were $M = 3.68$ and $SD = 0.88$. ESL/ TESOL teachers tended to agree with the existence of the observability of a LMS.

CONCLUSION AND DISCUSSION

The study sought to describe ESL/ TESOL teachers' perceptions of LMSs based upon Rogers' (2003) characteristics of an innovation (relative advantage, compatibility, complexity, observability, and trialability). All participants agreed that LMSs are adoptable media of teaching and learning technology.

Based on the perceived relative advantage of LMSs, the researcher found that the majority of TESOL/ ESL teachers mostly agreed

TABLE 4

Distribution of Participating ESL/ TESOL Teachers by Their Perception About Trialability of a LMS

Trialability Items	n	SD		D		NA/D		A		SA	
		f	%	f	%	f	%	f	%	f	%
I can select the features of a LMS	99	3	3.0	9	9.1	22	22.2	43	43.4	22	22.2
I can define the term of a LMS	99	3	3.0	13	13.1	20	20.2	45	45.5	18	18.2
I can test key features of a LMS	99	2	2.0	9	9.1	29	29.3	40	40.4	19	19.2
I use a LMS with no commitment	99	3	3.0	14	14.1	25	25.3	38	38.4	19	19.2

Note: Scale: 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*. n = 99.

TABLE 5*Distribution of Participating ESL/TESOL Teachers by Their Perception About Observability of Using a LMS*

Observability Items	n	SD		D		NA/D		A		SA	
		f	%	f	%	f	%	f	%	f	%
A LMS is a highly visible tool	98	1	1.0	6	6.1	27	27.6	39	39.8	25	25.5
Teachers can identify people easily in a LMS	99	3	3.0	11	11.1	28	28.3	36	36.4	21	21.2
A LMS software is well publicized	98	2	2.0	12	12.1	29	29.6	36	36.7	19	19.4

Note: Scale: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree. n ≠ 99 due to nonresponses.

with the existence of perceived relative advantage of LMSs. The majority of the respondents agreed or strongly agreed with the relative advantages of LMSs that allow them to access better teaching resources and improve the teaching of TESOL/ESL related contents. More than 50% of the respondents agreed or strongly agreed with the following statements: (1) my class will become more popular due to the addition of a LMS, (2) a LMS increases the accessibility of TESOL content, and (3) I envision delivering information faster by using a LMS as a software. The findings indicate that advantages to adopting a LMS, which were found by TESOL/ESL teachers in the United States (Kruger et al., 2015), also apply to TESOL/ESL teachers in the states of Alabama and Mississippi. These findings do not contradict with Rogers (2003) who stated that relative advantage is positively correlated to an innovation's rate of adoption.

Based on the perceived compatibility of LMSs, the researcher found that the majority of participating TESOL/ESL teachers generally agreed with the existence of perceived compatibility of LMSs. The majority of the participants agreed or strongly agreed with how a LMS is compatible with the ways TESOL teachers deliver class contents. More than 60% of participants agreed or strongly agreed with the following statements: (1) a LMS will allow me to deliver class contents based upon the needs of students, (2) a LMS

provides useful information to the students, and (3) my vision for the future of TESOL includes a LMS. These results do not contradict with Rogers' (2003) statement where he explained that an innovation can be compatible based on rooted cultural values, beliefs as well as previously adopted ideas.

Considering the perceived complexity of LMSs, the researcher found that the majority of participating TESOL/ESL teachers generally agreed with the existence of perceived complexity of LMSs. More than 50% of participants agreed or strongly agreed with the following statements: (1) using online resources to access information is easy for me, (2) it will be easy for me to download information from a LMS to my computer, and (3) a LMS seems user-friendly. These results do contradict with Rogers (2003) who stated that complex innovations have lower rates of adoption. A LMS is a complex innovation as perceived by one third of the surveyed teachers in the states of Alabama and Mississippi.

As for the perceived trialability of LMSs, the researcher found that the majority of participating TESOL/ESL teachers generally agreed with the existence of perceived trialability of LMSs. More than 50% of participants agreed or strongly agreed with the following statements: (1) I can select the features of a LMS that I want, and (2) I can test key features of a LMS with no obligation for continued future use. These results do not con-

tradict with Rogers (2003) who stated that adopters are more likely to develop a positive perception of an innovation when they can try it over a limited amount of time. This explains that most of the participants have had opportunities to test a LMS before fully incorporating a LMS into the dynamic of class or course delivery. Since most teachers showed a moderately positive attitude toward testing a LMS, they should be encouraged and offered more options to try a LMS platform in course delivery, with the aim of fully incorporating the technology in their TESOL classes.

The final characteristic was the observability of LMSs. The study found that the majority of participating TESOL/ESL teachers generally agreed with the existence of perceived observability of a LMS. More than 50% of participants agreed or strongly agreed with the following statements: (1) a LMS software is well publicized, (2) a LMS is a highly visible tool, and (3) teachers will easily be able to identify people who are involved in a LMS. The results do not contradict Rogers' (2003) statement that observability is positively related to the rate of adoption among members of a social system. Most participants had the opportunity to at least observe and use the features of a LMS. This behavior should be enforced by increasing the opportunity to make LMSs a highly visible tool within the school. Alabama and Mississippi teachers who perceived LMSs as a highly visible tool should be in the condition to share their knowledge with colleagues. LMSs can be advertised for all teacher categories through the school to make the platform more visible.

Data showed that the majority of participants generally agreed with all the 25 statements related to perceived positive characteristics of LMSs. The findings did not contradict Rogers (2003) who argued that the perceived characteristics of an innovation are positively related to the rate of adoption of an innovation by members of a social system. In order to diffuse LMSs at a faster pace, increased opportunities are necessary to allow more adopters to experience LMSs and use it

as a teaching platform even in informal instruction. Additional research in areas such as identification of other advantages of LMSs as seen from TESOL/ESL teachers' perspective, and assessment of LMSs is needed in order to identify other compatibilities and complexities as perceived by TESOL/ESL teachers.

RECOMMENDATIONS

Findings of this study can be used to understand the needs of TESOL teachers as the primary leaders in their classrooms, and to also understand the advantages of implementing LMSs in the states of Alabama and Mississippi. Findings from this study can help overcome teachers' resistance to change generated by a LMS as an innovation and can also provide guidelines for a more efficient installment of LMSs in Alabama and Mississippi schools and universities. Future studies can examine the motivation and learning of LMS users, measuring teachers' perceptions about the factors that contribute to the long-term sustainability of a LMS, and determining further attributes of LMSs.

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