

# Transformative Leadership and Learning Management Systems Implementation: Leadership Practices in Instructional Design for Online Learning

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**Abstract**—With the growth of online learning, several higher education institutions have attempted to incorporate technology in their curriculum. Successful technology implementation projects really on technology infrastructure and on the acceptance of education professionals towards innovation. This research study is aimed at illustrating the relevance of the human component in technology implementation projects in higher education by describing the Learning Management System implementation project executed by instructional designers working for a higher education institution in the southeast region of the United States. An analysis of the Transformative Leadership Theory, the Technology Acceptance Model, and the Diffusion of Innovation Process provide the support for a solid understanding of this issue and address recommendations for future technology implementation projects in higher education institutions.

**Keywords**—Learning management systems, transformative leadership theory, technology acceptance model, diffusion of innovation process, leadership, instructional design, online learning.

## I. INTRODUCTION

THE field of online learning in higher education experienced an exponential growth over the past few years. This growth is further supported by the rising number of higher education institutions integrating new technologies in their curriculum. In 2011, a total of 65% of higher education institutions in the United States regarded online learning as an essential component of their long term plans [1]. Learning Management Systems (LMS) were an example of technology being widely used in educational settings [2]. Review of relevant literature on projects focused on the implementation of such technology highlights the relevance of the human component to the successful adoption of innovation in educational settings.

Aimed at illustrating the relevance of theories related to the acceptance of technology by education professionals and to the transformative process through which educational leaders motivated and inspired their constituents, this research study described the LMS implementation project executed by instructional designers working for a non-traditional university in the southeast region of the United States. The intent was to emphasize the effect of leadership practices on the human component in technology and innovation-related projects in the realm of online learning for higher education.

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## II. REVIEW OF RELATED LITERATURE

### A. Online Learning

Online learning moved from being a trend to being part of the main stream. Commonly known as one of the methods of distance education, online learning made use of computers and Internet connection to deliver instruction [3]. To be considered truly online learning, a course had to present at least 80% of online delivery [4]. Over the years, online learning emerged as a viable and attractive alternative for individuals pursuing an academic degree. The relevance of online learning was rooted in the benefits this form of distance education presents to the field of education. According to [5], it afforded individuals, especially adult individuals, the opportunity to enhance their academic background regardless of their geographic location, time, and/or other constraints while supporting the active involvement of these individuals in a more active learning process, which was inherently aligned with the foundation of student-centered educational initiatives [6].

Even though distance education found its origins in the 1800s in England, when Isaac Pitman would send postcards to students through the postal service and would require them to transcribe passages of the Bible only to have them return these postcards to him, online learning dates back to the 1980s, when companies used to train their employees using computer-based programs [4]. Since then, this form of distance education grew exponentially over the years. In 2012 alone, over seven million students were enrolled in courses delivered online in the United States [7], while in 1998, there were only 1.5 million students taking online classes [8]. This steady growth corroborated the strength of online learning in the field of education due to the aforementioned quality of this delivery method and reinforced the idea of a potential revolution in the field of education [9].

As online learning experiences exponentially grew, higher education institutions made substantial investments in the infrastructure required to effectively support the use of technology and to successfully deliver online learning [10]. With the rise of computers, communication and information technology, paired with the growth of the Internet, these institutions had the opportunity to entirely revamp their academic programs. By promoting online learning, these higher education institutions aimed at increasing communication with their students, at establishing new revenue sources, and at reducing the constraints related to geography and time that posed challenges to students [11], as

they ventured in a new realm of online learning.

### *B. Learning Management Systems*

One form of technology that increasingly gained attention in the field of online learning was the concept of LMSs. Broadly speaking, an LMS was a tool used to create and manage courses in the online learning environment. More specifically, an LMS was a self-contained educational webpage with embedded instructional tools that were aimed at assisting faculty members in the organization of academic content and the engagement of students with the learning experience [12]. It allowed faculty members to manage instructional materials, communications, assignments, and other important aspects of the online course [13].

Regarded as one of the few technologies being actively and currently used in online learning [14], LMSs provided faculty members and instructional designers with an opportunity to integrate multimedia, such as audio and visual media pieces, along with interactive pieces and text to enhance learning experiences [12], which only increased the relevance of this tool to the success of online learning. Research [15] indicated that this relevance was reinforced by the fact that LMSs played an instrumental role in fostering active engagement by students, which was evidenced by meaningful connections and easy communication between faculty members and students and among students.

As LMSs became widely used by higher education institutions, their influence on the role instructors played grew exponentially. Within the scope of LMSs, instructors moved from oral transmitters of knowledge to learning facilitators and student mentors [16]. There were two main categories of LMS: study skills tools and communication tools. Study skills tools were related to authoring modules utilized to create activities and materials for students. Communication tools involved all communication means and strategies to facilitate the exchange of information between instructor and students and among students [12]. These categories of LMS helped online learning to become environments that facilitated knowledge acquisition and active learning.

LMSs offered major benefits to online learning. Those benefits were chiefly related to the organization and delivery of online courses and included time saving benefits, clear organization of learning materials, provision of effective assessment of student achievement, enhancement of interaction between teacher and student as well as among students, and the provision of additional resources to complement the lectures delivered by the teacher [17]. The numerous benefits that a well-designed LMS offered only corroborated the relevance of this educational tool to the realm of online learning, as it provided students with an opportunity to enhance their technology-related skills and facilitated the interaction between students and faculty members.

Another important aspect of LMSs was their relationship with data analytics and its impact on the learning experience. Online learning by way of LMSs promoted the dynamic visualization of learning data and the ability to interact with them [9]. By doing so, educators were able to identify patterns

and factors influencing learning processes. Additionally, it facilitated real-time assessment of content acquisition and transference of knowledge as a means of improvement of reinforcement of content.

LMS were widely used by several higher education institutions. An evidence of this assertion was the fact that approximately 95% of higher education institutions in the United States used an LMS to facilitate the core of their business, which was the teaching and learning experience, once the expected benefits were aligned with their strategic goals [2]. A number of factors were taken into consideration by higher education institutions as they attempted to align their strategic goals with the expected benefits potentially resulting from the implementation of LMSs in their curriculum. As with any business venture, one of the major factors associated with this alignment was the direct and indirect implementation costs.

The direct costs associated with the implementation of LMSs were related to site license, site administration, technical support, technology infrastructure, course development, as well as those costs associated with student training and faculty training [2]. Among the direct costs, those related to the technology infrastructure was most certainly one of the most significant challenges higher education institutions were to overcome as they attempted to implement an LMS in their curriculum [10]. Therefore, the successful implementation of an LMS was heavily dependent on pervasive and non-obtrusive availability of information technology as a support system. Nevertheless, the successful implementation of an LMS was not solely contingent to technology infrastructure. Despite the number of direct costs associated with LMS implementation projects, the indirect cost appeared to generate just as much concern among the related parties, as it involved the thorough participation and engagement of faculty members and school administrators – primarily instructional designers – with the new technology [10]. Notwithstanding the constant growth of online learning, the success of LMSs, as with the success of the any technology applied with the purpose of facilitating learning experiences, was still deeply contingent to the human factor, which was primarily related to teachers and instructional designers.

Based on the idea that the effective online learning relied equally on the support provided by information technology and on how faculty members and instructional designers made use of it, the successful implementation of LMSs was determined by the main users of the system, their skills, attitudes, and opinion [6]. The willingness to incorporate that form of education technology in their teaching practices played a big role in this scenario, as the adoption of education technologies was not an inherent component of teaching practices. According to [10] the resistance from educators found its roots in the fact that the implementation of an LMS required a fundamental change in their approach to teaching practices, which involved a revision of curricula and resources, the utilization of new teaching strategies, and the alteration of pedagogical assumptions. Conversely, the

acceptance from educators had a positive impact on the implementation of an LMS as it led to a significant increase in the use of this technology in the virtual classroom. Research [6] indicated that the initial acceptance by faculty members resulted in the establishment of a positive attitude towards the adoption of the LMS.

The overall acceptance of an LMS by a learning community, which involved faculty members, instructional designers, and students, rested on three main variables: innovator, innovation, and context. According to research [16], innovator was related to educators – teachers and instructional designers – and their technological proficiency, pedagogical capability, and social awareness. Therefore, the successful implementation of an LMS was contingent to the innovator's ability to use the LMS, the alignment of their pedagogical approach with that of the LMS, and the intricacies of the social nuance of the LMS. The innovation variable was intrinsically related to the intricacies of the LMS. It involved the congruence of the LMS with the pedagogical practices adopted by the higher education institution, the curriculum and the culture of the institution, and availability of technological support. Last but certainly not least, the context variable was related to the infrastructure of social support provided by the learning environment [16]. This infrastructure of social support involved the human infrastructure (institutional policies carried out by technical staff and administrative staff) and the technological infrastructure (facilities, resources, and accesses).

The synergy of the three variables explained above – innovator, innovation, and context – had a direct impact on the successful implementation of an LMS by a higher education institution. Further analysis of the human factor in the implementation of an LMS by a higher education institution revealed other factors that had a significant influence on the level of acceptance by faculty members and instructional designers. According to research [11], the list of factors included belief factors, application characteristics factors, individual factors, technological factors, and social factors.

Belief factors were related to the cognitive perception presented by an individual (in this case, teachers and instructional designers) towards the functionality of the system and the perceived utilitarian outcomes resulting from the use of the system, such as improvement of the effectiveness of task accomplishment [11]. Those factors were also associated with the concepts of Perceived Usefulness and Perceived Ease-of-Use, which represented the assessment of how the utility and usefulness of the LMS affected the perception and intention of faculty members and instructional designers towards the use of the LMS. Consequently, given their nature, these belief factors had a direct impact on the behavior of these individuals.

Application characteristics factors were intrinsically related to the innovation opportunities perceived by faculty members and instructional designers as a result of the implementation of the LMS [11]. They involved the effects of satisfaction between the characteristics of the LMS and the needs presented by faculty members and instructional designers.

Additionally, they are inherently related to the values and previous experiences of faculty members and instructional designers towards the implementation of the LMS.

Individual factors were associated with the personal characteristics of faculty members and instructional designers that helped devise the individual perception towards the implementation of an LMS. Those factors were related to the process through which individual characteristics impacted individual intentions within each faculty member and instructional designer to thoroughly use the LMS [11]. As a result, these factors played an instrumental role in the successful implementation of an LMS by a higher education institution.

Technological factors pertained to the characteristics of the technology – in this case, the LMS. These factors considered complexity as a defining component of the perception faculty members and instructional designers developed in relation to the LMS. Additionally, it defined the degree of difficulty perceived by these individuals towards technology and its adoption by the higher education institution, which directly defined their use of the LMS [11].

Last but not least, social factors were intrinsically related to the human component of technology implementation efforts. They covered the environmental factors imposed on faculty members and instructional designers. Those environmental factors included primarily the perceptions, opinions, and attitudes of other individuals influencing the perceptions, opinions, and attitudes of faculty members and instructional designers. Additionally, they defined the social influence on user perception regarding technology implementation [11]. In essence, the factors and variables explained above were major components of theories and practices adopted by leaders within higher education institutions as they developed strategies to effectively and successfully incorporate technologies in their curriculum, especially regarding the implementation of LMSs to support their ventures in the realm of online learning. Based on the intricacies and relevance presented by LMSs as well as the factors influencing the perception individuals had on this type of educational technology, the implementation of LMSs by higher education institution required leadership practices that placed the human factor at the center of project execution. Consequently, the acknowledgement that LMS users were the centerpiece of any LMS implementation was the initial step towards effective efforts to enhance online learning initiatives.

### *C. Leadership in Higher Education*

As previously explained, the use of technology for educational purposes experienced a steady expansion over the years. This expansion was primarily driven by the growth of the Internet and information technology as a means to facilitate communication within societies [8]. A number of challenges came to the fore as higher education institutions venture into the realm of online learning by gradually incorporating technologies into their curriculum, especially regarding the implementation of LMSs as tools for design, development, and delivery of their online courses [6]. Most

prominently, the resistance of educators (teachers and instructional designers) become a potential hindrance to the success of such implementation. According to research [11], this fact corroborated the idea that the successful and effective use of technology in educational settings was reliant not only on the existence of technology infrastructure itself but also on the level of acceptance and support by the primary users of this technology.

The apparent resistance from teachers and instructional designers towards the implementation of new LMSs in higher education institutions came from a variety of sources. According to research [19], it included concerns related to the resources available for the design and development of online courses, the scarcity of compensation for the support towards the implementation, the lack of recognition for embracing the new technology, the frustration related to the lack of technological infrastructure, the non-existent expertise concerning the new technology, and, last but not least, the anxiety towards the implementation and use of the new technology. Research [20] explained that, when combined, those concerns exacerbated the resistance from faculty members and instructional designers and were capable of causing significant problems to any effort toward digital literacy. As a result, technology implementation projects were likely to falter.

### 1. Technology Acceptance Model

To understand the resistance from teachers and instructional designers towards the implementation of LMSs, several research studies analyzed the relevance of the Technology Acceptance Model (TAM) [21], [22], [18]. The TAM found its roots in the Theory of Reasoned Action (TRA), which was based on the assumption that one's intention to perform was inherently related to one's attitude towards the act. In other words, the behavioral intention an individual developed towards performing an action was determined by individual and social factors [16]. Based on its foundational ideas, the TRA was used in attempts to determine the choices and specific patterns of behavior assumed by human beings in relation to their use of technology. As a consequence, the TRA helped devise the level of acceptance of individuals towards the adoption of technology in online learning initiatives.

The TAM had the ability to provide guidance in order to influence acceptance through design and implementation. It was widely used to predict the level of acceptance towards the adoption of technology by users and also to predict user behavior in relation to technology systems [22]. The model defended the idea that the acceptance of new technology was essentially determined by two fundamental factors, the perceived ease of use and the perceived usefulness of the new technology [12], [21], which were in congruence with the belief factors that were previously explained in this research study.

According to the TAM, attitude was another important determinant of the level of acceptance presented by faculty members and instructional designers towards the implementation of an LMS [12]. The attitude of an individual

was usually reflected in his or her behavior. As a result, it was able to influence the choices made by an individual and also his or her responses in relation to the adoption of new technology in their work environments [22]. Along with the perceived ease of use and the perceived usefulness of new technology, the attitude developed by faculty members and instructional designers was taken into consideration as higher education institutions attempted to incorporate new technology in their curriculum.

The technology self-efficacy of teachers and instructional designers was another element that presented challenges to higher education institutions as they attempted to implement an LMS in their efforts to expand in the realm of online learning. Technology self-efficacy was commonly known as the confidence presented by teachers and instructional designers concerning the use of a new technology [22]. The level of technology self-efficacy within each teacher and instructional designer had a direct impact on the students and on the development of their ability to use a new technology in the educational setting. That impact was due to the fact that those education professionals were expected to guide students in the use of a new technology. If they were unable or unwilling to use a new technology, students were likely to present the same perception towards the new technology.

### 2. Theory of Adoption of Innovation

As previously discussed, the TAM explained the relevance of the level of acceptance from teachers and instructional designers towards the implementation of an LMS. It revolved around the idea that this level of acceptance was directly related to the perception, opinion, and attitude those education professionals develop towards the diffusion and adoption of the new technology [16]. The process of diffusion of new technologies and its impact on education professionals was explained by the Theory of Adoption of Innovation. This theory was based on the assumption that individuals presented an inherent tendency to be more or less predisposed to the diffusion of an innovation or new technology [17]. The term diffusion was related to the process through which innovation was communicated over a period of time to essential members of a social system. In this context, the process of diffusion of a new LMS dictated the level of acceptance of faculty members and instructional designers towards the technology.

The process through which innovation was diffused among members of a social system was segmented into five components: Knowledge, persuasion, decision, implementation, and confirmation. According to [17], during the knowledge stage, the individual was exposed to the technology and was made aware of its existence, purpose and inner workings. In the persuasion stage, the individual developed an opinion about the technology based on the information collected during the knowledge stage of the diffusion process, which also included the understanding of the advantages and disadvantages of the new technology. The decision stage involved the act of deciding or rejecting the new technology, which was accomplished by the individual through testing and using the new technology. In the

implementation stage, the individual incorporated the new technology in his or her work process. Last but not least, in the confirmation stage the individual confirmed the implementation of the new technology in his or her work process [10]. This process corroborated the idea that the diffusion of new technology was not a single step act, but rather a process that demanded thorough thinking, analysis, and testing.

The understanding of the process through which new technologies were diffused was also accomplished by the categorization of individuals based on their acceptance towards these new technologies. Through this lens, individuals could be categorized as innovators, early adopters, early majority, late majority, and laggards. According to [10], innovators were usually those individuals who were the first to adopt a new technology. The early adopters followed the innovators in the adoption of the new technology. Those individuals were generally the leaders of the group and had significant influence on the perception, opinion, and attitude that other individuals developed towards the new technology. Following the early adopters, the early majority had significant clout given their location within the scale of categories, which allowed them to be the bridge between the early adopters and the late majority. The late majority had the tendency to develop a high level of skepticism towards the new technology and to refuse to adopt the new technology until the majority of the group had done so. Lastly, laggards were those individuals who were resistant to change and innovation altogether regardless of the influence of others.

### 3. Leadership Theories

The development of an understanding of the model through which technology was diffused and accepted as well as the categories in which education professionals were placed in relation to their level of acceptance of a new technology played a significant role in providing higher education institutions with essential knowledge to lead these education professionals in the process of technology implementation. According to [23], to facilitate this process, specific behavioral patterns were required from leaders in this context: a) integral, which was concerned with practices and behaviors that enhance shared governance among individuals; b) relational, which encompassed the practices associated with the establishment of relationships among individuals in educational settings; c) credibility, which was related to behavioral values, such as accountability and confidence; d) competence, which translates in the work ethics of leaders in this type of work environment; and e) direction and guidance, which are related to the behavior adopted by leaders as they steer their constituents in the right direction towards change.

Several leadership theories focused their attention to the need to motivate individuals to embrace change and innovation in education environments. Two of those theories were placed in the forefront of the spectrum: transactional leadership theory and transformative leadership theory. However, according to [23], much debate took place regarding the suitability of these theories to promote motivation among

teachers and instructional designers to accept innovation. While the transactional leadership theory promoted social exchange based on rewards for productivity and punishment for lack of productivity, the transformational leadership theory was aimed at stimulating and inspiring individuals to embrace change and achieve extraordinary outcomes [24].

The transactional leadership theory facilitated the construction of infrastructure and resources. Conversely, the transformational leadership theory played an instrumental role in ensuring employee satisfaction, engagement, and morale [23]. In this context, the transformational leadership theory was inherently aligned with the initiatives centered on the successful diffusion and implementation of new technologies, as it was focused on the opinion, attitude, and perception of team members towards embracing innovation.

As higher education institutions incorporated new technologies in their curriculum as a strategy to venture in the realm of online learning, the need to acknowledge the role education professionals played in the success of the diffusion and adoption of innovation was paramount. Leaders in this type of work environment needed to be able to inspire their constituents to develop a positive attitude and welcome new technologies as a means to embrace innovation [25]. Imparting a shared vision towards innovation facilitated the initial perception that the implementation of technology was a daunting venture and that the losses outnumbered the gains as technology became part of the curriculum.

The application of the ideas supporting the transformational leadership theory was facilitated by two major theoretical components: the inspirational motivation and the intellectual stimulation [24]. Through promoting inspirational motivation, higher education leaders motivated education professionals by providing these individuals with meaning, challenges, and shared vision. Through intellectual stimulation, higher education leaders stimulated education professionals to be innovative and creative by approaching old contexts in new ways, by reframing and addressing problems, and by questioning assumptions [24]. Shared vision and creativity became, therefore, the cornerstone of the diffusion, adoption, and implementation of new technologies, such as LMSs, in higher education institutions as they ventured in the realm of online learning.

Through the application of ideas supporting the transformative leadership theory, leaders in higher education institutions implementing an LMS as an innovation strategy were able to leverage the input and engagement of faculty members and instructional designers by prioritizing the value these education professionals were able to bring to diffusion process [25]. Applying a democratic leadership style in alignment with the transformational leadership theory facilitated this process, as it prioritized shared governance and the equal participation of all concerned parties. As a result, teachers and instructional designers became leaders of innovation, as they advocated the value and benefits technology brought to educational settings and to students pursuing a degree online.

### III. DESCRIPTION OF APPLICATION

This research study was aimed at describing the implementation of a new LMS by a higher education institution located in the southeast of the United States that focused on non-traditional, adult-oriented learning. It was also aimed at describing the leadership theories and practices applied by this institution to motivate instructional designers to fully embrace the new technology being implemented.

After several years working with Blackboard in the design, development, and delivery of its online courses, the aforementioned higher education institution came to the conclusion that the LMS was no longer able to support the exponential growth the institution had experienced throughout the years. An LMS Evaluation Team was assembled with the purpose of identifying a solution that would be more aligned with the innovative approaches the higher education institution had envisioned for its future. After a collaborative selection process, which included the participation of all members of the learning community in a democratic fashion, it was decided that Canvas by Instructure offered the most adequate platform to help the higher to education institution achieve its mission and vision.

The next step was the migration of all online courses the higher education institution had offered over the years. Those courses were designed and developed by the institution's instructional design and development department in collaboration with faculty members from all colleges. To accomplish this goal, the instructional designers from the instructional design and development department were tasked with the execution of the migration project, which spanned six months in 2015 and require precise allocation of resources.

#### A. Course Migration Project

##### 1. Goal

As a means to operationalize the mission and vision of the higher education institution, this project was conceptualized with the sole intention to successfully and effectively migrate the institution's online courses from its current LMS to the new LMS respecting the proposed time frame and making use of the proposed resources.

##### 2. Rationale

This project was justified by the need to maintain the highest quality of instruction to be designed, delivered and managed in an innovative and cost-effective LMS. Canvas provided innovative and pedagogically sound tools and services that were in congruence with mission and vision of the higher education institution. Consequently, the successful migration of the institution's online courses from the old LMS to the new LMS was instrumental.

##### 3. The Online Courses

The online courses offered by the concerned higher education institution were usually segmented into nine weekly modules. Each module followed the General Model of Direct Instruction developed by [26], in which learning activities encompassed the presentation of knowledge to the students,

the guided practice of the gained knowledge, and the assessment and verification of the newly gained knowledge. Among the several tools used for graded activities, those online courses used discussions, group projects, research projects, exams and quizzes. Additionally, in those courses, the content was presented in a mix of HTML pages, interactive presentations, and videos.

##### 4. Project Execution

Given the disparity between Blackboard and Canvas regarding page layout, course management, submission of assignments, and participation in discussion forums, every single content page and graded activity in Blackboard needed to be reviewed and modified or discarded in order to be compatible with the context and the intricacies of Canvas. Therefore, the Course Migration Project involved the following tasks: a) copying of item from Blackboard; b) review of the item to ensure compatibility with Canvas; c) migration of item to Canvas; d) review of entire course after migration to Canvas for quality assurance purposes.

##### 5. Workload Distribution and Timeline

Taking into consideration previous workload measurements, it was established that the total amount of 30 man-hours was necessary to ensure the successful migration of each online course. The distribution of the workload among the instructional designers was divided by month (160 man-hours, considering a 40-hour work week) taking into consideration their previously established workload.

##### 6. Available Resources for Guidance

The instructional designers involved in this project made use of the following resources to guide the accomplishment of the tasks: a) video tutorials provided by the LMS parent company (Instructure); b) course design guides and tool guides provided by Instructure; c) Lynda.com tutorials about Canvas and its tools; and d) Lynda.com tutorials on HTML coding.

#### B. Leadership Theories and Strategies

The Course Migration Project described above was a massive venture solely executed by the instructional designers from the instructional design and development department. Prior to the execution of the project, the level of anxiety and resistance among these education professionals was considerably high. The main reason for that being the fact that these individuals had minimal understanding of Canvas and its tools. They had worked with Blackboard for a number of years and were comfortable with the tools and processes the LMS provided for the design, development, and delivery of online courses. The migration to Canvas represented a significant change in the course design process and presented new demands from the instructional designers, such as the need to learn how to use the new LMS and its tools, the need to migrate the existing courses from Blackboard to Canvas (which was a task added to their existing workload), and the need to ensure quality assurance in every single migrated course.

Given the aforementioned circumstances, the instructional design and development department directors developed a strategy based on leadership practices aimed at reducing the resistance from the instructional designers towards the new LMS and the Course Migration Project. This strategy was built upon the assumptions presented by the TAM and the practices proposed by the transformational leadership theory. The successful migration of the online courses from Blackboard to Canvas was contingent not only to the technology infrastructure made available by the higher education institution, but also to the level of acceptance from the instructional designers towards the new technology. The institutional role of these instructional designers encompassed more than simply designing courses. These educational professionals were also propagators of innovation and quality of online instruction to faculty members and online students. Therefore, their buy-in and full commitment was not only a necessity but also a requirement for the execution of the Course Migration Project.

The instructional design and development department directors relied on inspirational motivation and intellectual stimulation to ensure full commitment from the instructional designers. Using inspirational motivation techniques, the directors reinforced the value the instructional designers brought not only to the success of the project, but also to the success of the higher education institution in the realm of online learning. Using intellectual stimulation techniques, the leaders reinforced the fact that their expertise in instructional design, LMSs, and new technologies was paramount in the construction of effective and memorable learning experiences and that their creativity was valuable and instrumental in every single task accomplished during the execution of the project.

Weekly departmental meetings were held in the weeks prior to project kickoff and during project execution. The intent of these meetings were to share knowledge related to Canvas, to identify, address, and mitigate issues related to the modification of existing activities to fit the context of Canvas, to establish checklists and guidelines for course migration, and to establish processes for course migration. In these meetings, the leaders and the instructional designers had equal opportunity to have a say and also shared responsibility towards the execution of the project. Democratic leadership and shared governance were prioritized as a means to ensure that every single member of the instructional design and development department participated in the establishment and execution of the project.

#### IV. DISCUSSION OF OUTCOMES

The Course Migration Project was finalized one week before the estimated date of completion. No course was left to migrate and all courses went through the same migration process. All issues related to activity modification were addressed and some courses had the opportunity to be extensively updated to comply with the new LMS. The workload was fairly shared among the instructional designers and directors, who also were tasked with courses to migrate. All these accomplishments were due to a robust project plan

that was developed by all members of the department. As previously stated, it included guidelines, checklists, resources, and a timetable all participants strived to meet. However, the most significant outcome of this project was the complete buy-in from the instructional designers by project completion. Through the application of the ideas supporting the transformational leadership theory, the directors were able to motivate and inspire all instructional designers involved in the Course Migration Project by reducing their level of resistance and increasing their level of acceptance towards the new LMS. The combination of inspirational motivation and intellectual stimulation techniques during weekly meetings and also on one-on-one meetings between leader and instructional designer were paramount in the accomplishment of this project. The diffusion of innovation processes among instructional designers was carried out uneventfully as the instructional designers were able to experience each stage of the process thoroughly and with the necessary support. At the end, all instructional designers finished their tasks with a sense of individual and communal accomplishment.

#### V. REFLECTIONS OF THE PRACTITIONER

The Course Migration Project was most certainly a big test to the instructional design and development department. For the departmental instructional designers, this project tested their willingness to change, to become part of something bigger than their routine, and to wholeheartedly embrace innovation. For the departmental leaders, this project tested their ability to gauge the level of acceptance to innovation in each member of the department. It also tested their ability to apply the theoretical foundation of transformational leadership during the execution of a massive and time sensitive project. Upon project completion, all concerned parties were able to reflect on their accomplishments and professional growth as a result of their participation in the project.

#### VI. CONCLUSION AND RECOMMENDATIONS

Innovation in educational settings, such as the implementation of an LMS, requires not only a robust technology infrastructure but also substantial input for all concerned parties [27]. The execution of this project corroborated the ideas supporting the transformational leadership theory. In similar projects, it is recommended that instructional designers are involved in the earlier stages of project planning. Earlier involvement of instructional designers (as with all concerned parties) ensures thoroughness of project plan, as it allows leaders to have a solid understanding of the gravitas and breadth technology implementation projects have on education professionals.

This paper was aimed at describing the implementation project of a new LMS by instructional designers in a non-traditional, adult-oriented higher education institution in the southeast region of the United States. The project required the migration of the higher education institution's online courses from the existing LMS to the new LMS. It initially generated a low level of acceptance from the instructional designers

towards the new LMS. This low level of acceptance was rooted in the unfamiliarity of the instructional designers about the new LMS and the changes potentially resulting from its implementation. To mitigate this issue and ensure a high level of acceptance toward the new technology and motivation from the course designers, the departmental leaders followed the ideas supporting the transformational leadership theory, which was thoroughly explained in this research study.

Prioritizing the human component in a technology implementation project is not only instrumental, but also paramount to the success of the project. The application of the transformational leadership theory is recommended, as it enables leaders in technology-enabled educational settings to inspire and motivate constituents in order to ensure total acceptance, participation, and engagement from these professionals. As a result, technology implementation projects are successfully implemented and team members have a sense of ownership and achievement.

#### REFERENCES

- [1] Wilson, B. M., Pollock, P. H., & Hamann, K. (2014). Spillover effects in online discussions: Assessing the effectiveness of student preceptors. *Journal of Information Technology & Politics*, 11(1), 15-24. doi:10.1080/19331681.2013.848178
- [2] Smith, P., Rao, L., & Thompson, S. (2013, May). Towards developing a cost-benefit model for learning management systems. Presented at the *International Conference on Information Resources Management*, Natal, Brazil. Retrieved from [http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1045&context=confir m2013W-K.Chen, Linear Networks and Systems \(Book style\). Belmont, CA: Wadsworth, 1993, pp. 123-135.](http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1045&context=confir m2013W-K.Chen, Linear Networks and Systems (Book style). Belmont, CA: Wadsworth, 1993, pp. 123-135.)
- [3] Lister, M. (2014). Trends in the design of e-learning and online learning. *Journal of Online Learning and Teaching*, 10(4), 671-680. Retrieved from [http://jolt.merlot.org/vol10no4/Lister\\_1214.pdf](http://jolt.merlot.org/vol10no4/Lister_1214.pdf)
- [4] Kentnor, H. E. (2015). Distance education and the evolution of online learning in the United States. *Curriculum and Teaching Dialogue*, 17(1), 22-34. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2643748B](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2643748B)
- [5] Crawford-Ferre, H. G., & Wiest, L. R. (2012). Effective online instruction in higher education. *The Quarterly Review of Distance Education*, 13(1), 11-14.
- [6] Emelyanova, N., & Voronina, E. (2014). Introducing a learning management system at a Russian university: Students' and teachers' perceptions. *The International Review of Research in Open and Distance Learning*, 15(1), 272-289. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/1701>
- [7] Wang, P. A. (2015). Assessment of asynchronous online discussions for a constructive online learning community. *International Journal of Information and Education Technology*, 5(8), 598-604. doi: <http://dx.doi.org/10.7763/IJET.2015.V5.575>
- [8] Hall, R. A. (2015). Critical thinking in online discussion boards: Transforming an anomaly. *Delta Kappa Gamma Bulletin*, 81(3), 21-43. Retrieved from <https://www.questia.com/library/journal/1P3-3673685051/critical-thinking-in-online-discussion-boards-transforming>
- [9] Bonvillian, W. B., & Singer, S. R. (2013). The online challenge to higher education. *Issues in Science and Technology*, 29(4), 23-30. Retrieved from <http://issues.org/29-4/the-online-challenge-to-higher-education/>
- [10] Annan, D. L. (2008). Facilitating adoption of technology in higher education. *Distance Learning*, 5(1), 13-17.
- [11] Coskuncay, D. F., Ozkan, S. (2013). A model for instructors' adoption of learning management systems: Empirical validation in higher education context. *TOJET: The Turkish Online Journal of Educational Technology*, 12(2), 13-25. Retrieved from <http://www.tojet.net/articles/v12i2/1222.pdf>
- [12] Wichadee, S. (2015). Factors related to faculty members' attitude and adoption of a learning management system. *TOJET: The Turkish Online Journal of Educational Technology*, 14(4), 53-61. Retrieved from <http://www.tojet.net/articles/v14i4/1445.pdf>
- [13] AbuShawar, B. A., & Al-Sadi, J. A. (2010). Learning management systems: Are they knowledge management tools? *International Journal of Emerging Technologies in Learning (iJET)*, 5(1), 4-10. Retrieved from <http://online-journals.org/index.php/i-jet/article/view/887>
- [14] Liebowitz, J. (2013). A comparative study of emerging technologies for online courses. *Distance Learning*, 10(3), 1-11.
- [15] Rubin, B., Fernandes, R., Avgerinou, M. D., & Moore, J. (2009). The effect of learning management systems on student and faculty outcomes. *The Internet and Higher Education*, 13(1), 82-83. Retrieved from <http://www.sciencedirect.com/science/article/pii/S1096751609000657>
- [16] Asiri, M. J., Mahmud, R., Bakar, K. A., & Ayub, A. F. bin M. (2012). Factors influence the use of learning management system in Saudi Arabian higher education: A theoretical framework. *Higher Education Studies*, 2(2), 125-137. doi: <http://dx.doi.org/10.5539/hes.v2n2p125>
- [17] Alias, N. A., & Zainuddin, A. M. (2005). Innovation for better teaching and learning: Adopting the learning management system. *Malaysian Online Journal of Instructional Technology*, 2(2), 27-40. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.119.9362&rep=rep1&type=pdf>
- [18] Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Educational Technology & Society*, 12(3), 150-162.
- [19] Johnson, T., Wisniewski, M. A., Kuhlemeyer, G., Isaacs, G., & Krzykoski, J. (2012). Technology adoption in higher education: Overcoming anxiety through faculty bootcamp. *Journal of Asynchronous Learning Networks*, 16(2), 63-72.
- [20] Ribble, M., & Miller, T. N. (2013). Educational leadership in an online world: Connecting students to technology responsibly, safely, and ethically. *Journal of Asynchronous Learning Networks*, 17(1), 135-143.
- [21] Fathema, N., Shannon, D., & Ross, M. (2015). Expanding the technology acceptance model (TAM) to examine faculty use of learning management systems (LMSs) in higher education institutions. *MERLOT Journal of Online Learning and Teaching*, 11(2), 210-232. Retrieved from [http://jolt.merlot.org/Vol11no2/Fathema\\_0615.pdf](http://jolt.merlot.org/Vol11no2/Fathema_0615.pdf)
- [22] Motshegwe, M. M., & Batane, T. (2015). Factors influencing instructors' attitudes toward technology integration. *Journal of Educational Technology Development and Exchange*, 8(1), 1-16. Retrieved from <http://tnet1.theti.org/evaluate/infoSingleArticle.do?articleId=1334449&columnId=1334443>
- [23] Kezar, A. J., Carducci, R., Contreras-McGavin, M. (2011). Changes in the Landscape of higher education leadership research. Rethinking the "L" word in higher education: The revolution of research on leadership. *ASHE Higher Education Report*, 31(6), 101-136.
- [24] Bass, B. M., Riggio, R. E. (2010). The transformation model of leadership. In G. R. Hickman (Ed.), *Leading Organizations: Perspectives for a New Era* (2nd ed.) (pp. 76-86). Thousand Oaks, CA: SAGE Publications, Inc.
- [25] Brigance, S. K. (2011). Leadership in online learning in higher education: Why instructional designer for online learning should lead the way. *Performance Improvement*, 50(10), 43-48. doi: 10.1002/pfi.20262
- [26] Reigeluth, C. M., & Carr-Chellman, A. A. (2009). *Instructional design theories and models: Building a common knowledge base*. New York, NY: Routledge.
- [27] Ryan, T. G., Toye, M. T., Charron, K., & Park, G. (2012). Learning management system migration: An analysis of stakeholder perspectives. *The International Review of Research in Open and Distance Learning*, 13(1), 220-237. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/1126/2120>

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