



Education Technology and its Impact on the Professional Development of Teachers



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ABSTRACT

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Technology has evolved to become one of the more valued tools for organizational transformation. Today, many organizations have made investments in technology as a means for continued growth and improved performance. This research is divided into various sections that look into how education technology has impacted human resource functions within an organization. With a specific focus being on learning institutions, it analyzes the impacts it has on professional development, change management processes, hiring practices, and job retention within an organization. The research addresses the following research question: What is the impact of education technology integration in the school environment on the professional development of teachers and execution of human resource functions? The literature review section provides information that analyzes the research problem. This Study concludes that while technology has both positive and negative impacts, the positive impacts are more dominant; thus, elevating the narrative that education technology and its integration in organizations is essential for improved performance and productivity.

Keywords: Education Technology, Professional Development, Change Management, Human Resources, Recruitment, Retention.

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A handwritten signature in black ink, appearing to read 'Paul Leger', is positioned above the printed name.

Name Paul Leger

Date 2/2/2022

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1. Introduction

1.1. Research Background

Education technology has come to be viewed as a means for improved student learning outcomes and professional practice. Thus, most learning institutions have sought to integrate technology in the education practice in the pursuit of improved education outcomes and goals. With the advent of technological innovations like the internet, every learning institution has developed infrastructure to enhance technology application in the classroom environment. However, this raises the question of how technology influences learning processes and its impact on the various institutional practices like hiring practices, change management processes, and employee retention practices. The adaptation of technology in the teaching practice has faced heavy criticism due to the inadequacy of its effectiveness in improving student outcomes. Raja & Nagasubramani (2018) argue that the perceived cost of technology application in the education sector overburdens institutions; thus, learning institutions that lack financial ability may view it as an unnecessary tool for school improvement.

Human resource functions have evolved over time to focus on employee administration by managing roles like change, recruitment, development, leadership, and performance (Alsaadat, 2018). The major aim of human resources in the education sector is to ensure that learning institutions achieve the required performance goals while retaining the right employees. Further, Boon, Eckardt, Lepak & Boselie (2017) assert that strategic human resource management comprises practices that improve the skillset and motivate employees to enable learning institutions to achieve strategic goals. Technology advancement is an emerging trend that has been integrated across all institutions, agencies, and organizations. Therefore, education technology is important because it improves teachers' development through skills, knowledge, and expertise, further improving their performance (Oh & Huang, 2018). It is also advantageous to human resource managers because offering employees more training opportunities facilitates retention since it increases job commitment and satisfaction. Technology in education also affects change because it provides ways to ease day-to-day tasks like automation and reduced paperwork, which increases efficiency and performance. Teachers who do not have technological skills will find it difficult to teach students who have grown in the internet era. Also, they will find it challenging to give the learners the required skills using technology, making it essential for teachers to improve their

development through training to increase their expertise in the use of education technology in the classroom.

Teachers are often tasked with many responsibilities that sometimes may not be part of their job description. Quite often, teachers may find themselves engaging in duties beyond their normal lesson planning as the school curriculum stipulates. Learning institutions rely on teachers to offer quality education and to employ strategic pedagogical practices that influence better student outcomes (Gore, Lloyd, Smith, Bowe, Ellis, & Lubans, 2017). However, in most instances, teachers have become like secondary parents to these students as they are responsible for the students' all-around development. Sometimes, learners lack readiness and reluctance to engage with technology (Kebritchi, Lipschuetz, & Santiago, 2017). This poses a challenge to the successful use of technology in the classroom. As a result, teachers need to be adequately skilled and prepared for their professional practice.

Professional training at a post-secondary institution is usually considered the standard for any teacher enrolling for practice. However, the importance of this has diminished as the education field keeps evolving through technological innovations and increased students' diversity in schools. Therefore, professional development has become an essential aspect in any profession as it provides a means to continued improved competence and skills. Moreover, Bowman, Vongkulluksn, Jiang, & Xie (2020) assert that career development provides educators with new skill sets to tackle new and emerging situations in the classroom setting. Professional development is administered through seminars, training programs, and other activities. Bowman et al. (2020) further argue that professional development programs enable teachers to develop their skills and confidence in using technology in the classroom.

Technology also influences how different human resource roles are practiced in an institution. To a larger extent, educational technology has provided convenience and autonomy in executing various institutions' roles and functions. However, the cost of implementation and maintenance cannot be overlooked as well as its negative effects on human resources. Thus, there is a need for learning institutions to assess and weigh the value of educational technology alongside its impact on improving education practices before integrating it into practice.

1.2. Research Problem

Contemporary society has embraced technology to be a part of day-to-day activities. Education technology has picked on educators, education agencies, and legislators' interest through its portrayal of immense potential in reforming the education practice. Technological innovations are continuously advancing due to society's dynamic changes today, characterized by millennials and generation Z learners. Notably, technology integration in the school curriculum today is mandatory to enhance the student learning experiences (Eiland & Todd, 2019). As a result, schools are striving to transform their operations and practice into the digital age.

While technology enhances the ability to reach many students effectively, it is also a tool for improving teacher training and professional development needs, which further translates to improved performance (Zheng, Wang, Doll, Deng, & Williams, 2018; Kumar & Daniel, 2016). In addition, Harris, Al-Bataineh, & Al-Bataineh (2016) claim that technology can be used as a tool for student development by customizing pedagogical instructions that meet their learning needs. Besides, technology use is a means to teachers' professional development because it will enable them to develop new skills of teaching learners more efficiently in this new age. Digitization and innovation have transformed how human resource functions are performed, like change management and hiring practices, among other human resource functions. Therefore, this research will aim to establish how educational technology influences teachers' professional development and other human resource roles and functions.

1.3. The Objective of the Study

This research aims to assess the impact of education technology on teachers' professional development and how it influences change management, hiring practices, and employee retention. This proposal will look at education technology today and reflect on future practices in the education sector and professional practice. This research question was developed to guide this research:

What is the impact of education technology integration in the school environment on teachers' professional development and execution of human resource functions?

1.4 Scope of the Study

The field of education is very broad, and numerous pieces of literature explore this field's various aspects. In order to address the research question of this study, there is a need to demystify the complexity and influence of technological application in this field. The scope of this Study will include the pedagogical practices, educator career development, and human resource functions like change management, hiring practices, and job retention as a result of technology adaptation in the learning environment.

1.5 Research Significance

A while back, education technology seemed like a distant dream as many believed that traditional methods were effective. However, Hartman, Townsend & Jackson (2019) argue that learning environments that incorporate technology are effective. In the past, the workforce was mainly composed of the older generation employees who have little knowledge and training on technology and its application in the education practice. Today, various higher learning institutions have included computer courses in their training programs to ensure that new teachers who enter the profession are well equipped with the appropriate skill set for the education field. Moreover, current research studies are focused on research on the effectiveness of integrating technology in the classroom.

This research study will add to the existing information on the effectiveness and role of technology in education practices. It will also discuss how technology and its application in the education sector influence educator professional development, hiring practices, change management within learning institutions, and employee job retention. The study will also provide adequate information that school leaders and administrators can use to make the budgetary requirements and new policy enactment strategies to influence their institution's development and improvement.

2. Literature Review

The literature review section is organized to provide rich knowledge and understanding and an analysis of existing research on the research problem. This section will analyze the various aspects of the research, focusing on professional development, hiring practices, change management, and job retention resulting from educational technology.

2.1 Education Technology and Human Resource Development

Technology in education cannot be ignored as the world embraces advanced technology tools to increase efficiency and solve emerging problems. Rosenbusch (2020) notes that education has shifted from traditional methods like face-to-face to online tools like learning apps, e-learning platforms, and communication applications like Zoom and Google Meet. Covid-19 is an emerging problem that elaborated the significance of distance learning for the better health of everyone. The study shows that human resource management has seen the importance of having the right talent pool for better service and performance. Technology models have improved learning outcomes by facilitating distance learning and applying scaffolding to help learners improve their performance.

Notably, human resource strength is measured through its efficiency and level of technology used (Zarqan & Sukarni, 2017). Therefore, the human resource manager should invest in human resource development to encourage innovation and effective technology skills among the teachers for better performance.

Training teachers about education technology improves their skills and development goals while acting as sustainability aspects for ensuring the achievement of a learning institution's competency and performance long-term goals (Mattjik, Akbar, & Yasin, 2020). This article emphasizes that training is important to give employees new skills for tackling emerging issues. Hence, training the teacher's new technological skills as they emerge enables them to increase their efficiency when teaching students to improve their understanding.

Efficiency is achieved by using technology to manage repetitive tasks like reading and writing, offering scaffolding to slow learners, and facilitating accurate decision-making using algorithms to check student progress (Parry & Battista, 2019). Education technology has revealed the challenges of human

resource management when training the teachers to improve their skills and ensure their wellbeing. Technology resistance is common to users that find it difficult to use or have misconceptions about the said change (Basyal & Seo, 2017); therefore, human resource managers should ensure they offer training in a way that encourages teachers to embrace it and reduce resistance, which can affect the overall health of the teachers as they struggle to keep up with the fast world of technology.

2.2 Change Management

Technological innovations bring about change in an organization, which can be structural, strategic transformational, people-centric change, or remedial change. All these types of changes affect employees in one way or another. Education technology has created an immense transformation in institutional practices and operations, thereby creating a need for adopting change. Change is often faced with resistance due to some reasons. However, Marshall (2016) argues that one major obstacle to change brought about by technology is the inadequacy of reports to showcase the value and positive effect of technology on learner educational outcomes.

According to Serdyukov (2019), the education sector is always undergoing constant change processes. This is because society keeps evolving and student needs keep changing; thus, learning institutions are forced to make constant changes to accommodate the diverse student demographics while addressing their individual education needs. Organizational change management as a result of technological advancements is a complex process. Thus, it is essential for organizations to avail information of new technology and how it will benefit the stakeholders to minimize chances of resistance. Changes result from technology, especially in higher education, by shifting from traditional learning methods to incorporating online and blended learning methods (Rosenbusch, 2020). Such magnitude changes have to be embraced and accepted by the relevant stakeholders like the teachers, learners, parents, and school management for them to be successful.

Change management that seeks to benefit every stakeholder is easier to implement compared to changes that benefit organizational management while leaving out the subordinates. This is a major contribution as to why such changes may fail to become successful even after considerable efforts have been made by management. Organizations today are faced with the challenge of creating a sustainable change due to ineffective analysis of the various change dynamics and leadership (Stouten, Rousseau &

Cremer, 2018). Therefore, it is evident that successful organizational change implementation requires effective leadership that is determined and encourages inclusivity and cohesion. This way, an organization can identify the unforeseen sources of resistance and develop a strategic plan to ensure successful change management and implementation over time.

2.3 Professional Development

Different people have different levels of understanding and confidence in the use of technology and its application in various fields. However, technology is no longer viewed as a foreign experience in the field of education, rather a standard of the learning process (Rashid & Asghar, 2016). In light of this, educators are required to have the knowledge and skills to incorporate technology in their pedagogical practice. Kafyulilo, Fisser, & Voogt (2016) suggest that career development programs help educators develop technological skills and competencies. Moreover, in the professional training, teachers must have access to technological pedagogical content knowledge, a framework that helps them to integrate technology in their practice best. Technology has become an essential tool in the teaching practice as technologically savvy educators can use online tools to plan their lessons and create learning materials for their learners. Notably, technology has become an enabler of professional training and the development of educators' competencies. Educators can use online platforms as learning resources, and they can also attend seminars and workshops online at their convenience. Saini & Al-Mamri (2019) identify the use of gamification websites as student assessment tools as it enhances student use of online learning material and processes to improve performance.

The integration of technology in education also influences the pedagogical practices used by educators. However, most educators who did not undergo training in technology struggle to adapt and apply technology in their practice. In light of this, most higher education learning institutions have become flexible to accommodate the changing student and education sector dynamics. Holland & Bardoel (2016) claim that adaptation of technology within an organization helps in boosting the quality of their services and products.

On the contrary, it is arguable that technology has a negative impact on student learning outcomes. While technology enhances effectiveness and convenience in service provision and delivery, it may become a disadvantage, especially to learners who are slow at grasping the content. Thus, they

may feel that the curriculum is being covered rather too quickly, creating disconnection in the learning process.

2.4 Education Technology and the hiring practices

Hiring is among the numerous primary human resource functions. Parry & Battista (2019) claim that organizations' human resource functions have dramatically changed in the era of technology. Hence, technology has become very effective in ensuring that the hiring process is smooth and thorough. Many people today have a huge online presence; thus, employers can use it as a tool for screening employees during the hiring process (Cooley & Parks-Yancy, 2016). The recruitment process of any organization is aimed at acquiring top talent to create a skilled workforce. In selecting the top talents, the human resources officer seeks to select employees that only meet the organization's demands and prospects. This process can be tedious, costly, and time-consuming. However, Solek-Borowska & Wilczewska (2018) claim that the hiring process has been simplified through reduced costs and time taken to conduct the process in the advent of technology.

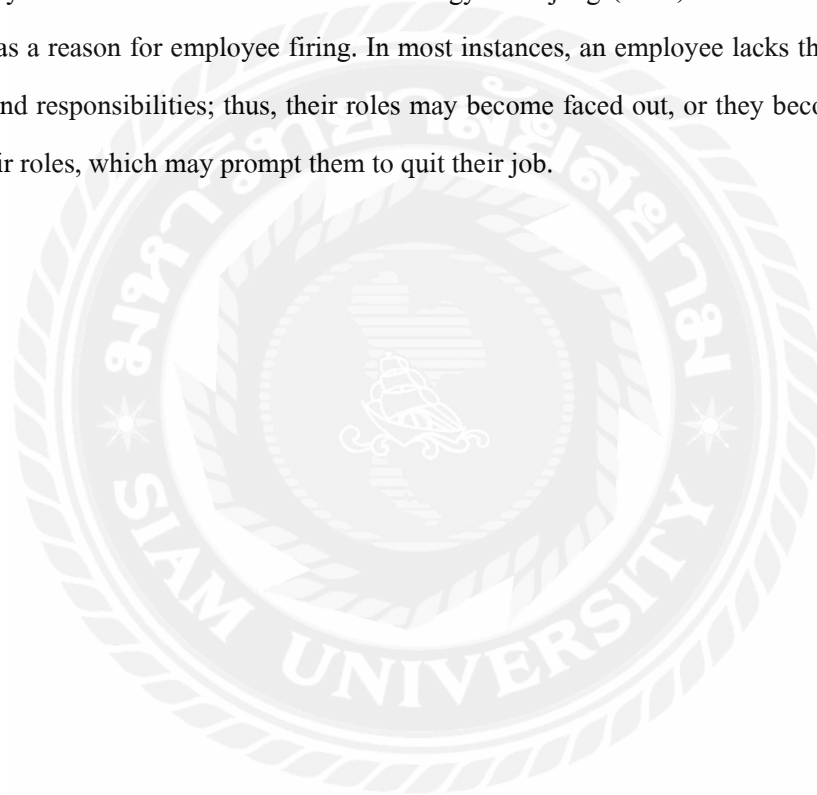
2.5 Education technology and hiring criteria and retention

With the advent of technology and its innovations, many organizations have resorted to retrench employees that are redundant because of the enhanced effectiveness of technology integration in organization operations. Notably, people may lose their jobs due to a lack of the required skills and knowledge. However, in some instances, technology has also created new job opportunities, and organizations have found themselves in need of fresh and qualified talent to act in the new capacity (Peng, Wang, & Han, 2018). For instance, most higher education institutions have a workforce that lacks the technological know-how and skills to implement and use it in their practice. Hence, organizations have been forced to hire talent that is technologically savvy to help in implementing change. Besides, the job market today has included knowledge and skills in technology as a job requirement. Learning institutions that offer professional training have also incorporated technology into their learning curriculum to improve their knowledge and skillset and enhance employee attractiveness.

Employee retention involves actions taken by an organization to prevent turnover. Employee retention is a continuous effort made by an organization to keep employees motivated and willing to stay in the organization (Khalid & Nawab, 2018). Employee satisfaction is an important aspect of an

organization to ensure employee retention. Employee satisfaction can be attained at different levels, i.e meeting the employees' needs and wants, creating a conducive and nurturing work environment, and offering career development opportunities and promotions, among others.

Advancement in technology is a leading contributor to job loss in contemporary society. However, some employees feel unmotivated, unwanted, and redundant in their job roles. For instance, organizations with a high number of young and technologically savvy employees and few older generation employees are susceptible to facing employee turnover. This is because some older workforce members may lack the capability and drive to learn and use technology. Tanjung (2020) identifies a lack of skills and knowledge as a reason for employee firing. In most instances, an employee lacks the ability to conduct their roles and responsibilities; thus, their roles may become faced out, or they become unmotivated to perform their roles, which may prompt them to quit their job.



3. Discussions

Advancements in technology have disrupted the organizational landscape in modern society. These advancements have impacted the organization's practices, particularly the human resource functions, and shaped how organizations operate. With time, organizations have come to embrace technology and perceive it as an important part of their being. In light of this, this discussion section will analyze the literature's findings explored in this research. It will help provide insights into how technology has impacted human resource management practices of professional development, change management, hiring practices, and job retention.

From the literature above, it is evident that technology creates immense potential for enhancing and developing the quality of services, influencing effective communication, and improving an organization's performance. The education sector, in this case, benefits a great deal from the integration of technology through improved quality of education and improved pedagogical approaches that effectively address the educational needs of all learners. This way, learning institutions are able to achieve better learning outcomes for their learners. Raja & Nagasubramani (2018) argue that technology has positively impacted our lives' various aspects by its ability to computerize tasks. They further claim that the adaptation and integration of technology in learning processes have influenced how educators teach their learners and how learners gain access to learning materials. Thus, the role of technology in education cannot be ignored.

The change management process within an organization has been made easier through technology that has enabled timely and effective communication. Moreover, technology presents solutions to problems that can be tedious and time-consuming. As a result, the organizational change that is due to technology is less likely to be resisted as employees will witness its effectiveness firsthand. Fear of job loss and type due to technology integration may to a certain extent be attributed to resistance to change. However, this can be countered through professional development and training programs to improve technology use skills and confidence.

4. Conclusions

This research study focused on how education technology influences human resource functions like professional development, change management, hiring practices, and job retention. In addressing the study's research question, the literature review provided information on the various impacts of technology. The overall conclusion for this research is that education technology has created positive impacts through its elevation of various organizational operations by enhancing effectiveness and creating convenience. Through this effect, an institution can enhance its performance and achieve improvement. For instance, learning institutions that adopt technology in their practices will enable students to have better learning outcomes.

Moreover, technology use in the education sector benefits the learners and educators, and school leaders through professional development that improves their skills and competencies. By doing so, educators improve their performance which in turn influences better student learning outcomes. The use of technology in the classroom also improves teachers' confidence, especially those who had little or no knowledge (Lee, Longhurst, & Campbell, 2017).

Alternatively, technology has created negative impacts within an organization through job loss and reduced student connection with the learning process. Therefore, one can conclude that while technology has both negative and positive effects, the positive impacts cannot be outweighed as they help in simplifying organizational operations and human resource functions.

5. Recommendations

From the information reviewed for this research topic, it is evident that technology integration enhances effectiveness. Information gathered from this research can be used in various avenues and forms; for example, higher education institutions can use it to help them in designing developmental programs that address the various needs of learners and employees in an organization. In addition, this information can also be used to tailor-make training programs for employees at organizations to develop their skills and competencies when using technology in their practice. However, there are certain gaps identified from the existing studies, and as a result; they will form the basis for future studies' recommendations.

First, technological innovations vary according to the different sectors they are applied in; thus, there is a need for future studies to focus on the specific type of technology and analyze its effectiveness. For instance, the use of smart boards in the classroom setting helps provide and organize learning material for the learners. Secondly, future studies should also indulge in conducting longitudinal studies that will help in tracking the effectiveness of a technology type over time. This is because; technological development and innovations tend to create improvements on an already existing technology that performs the same function. This provides an analysis and assessment of how technology has continually impacted organizational operations and practices.

Another recommendation is that future studies need to focus on how education technology has influenced organizations' different human resources management and leadership styles. This way, they will provide an understanding of how these styles meet organizational needs and those of the employees and how they stand to benefit from it. These different styles of leadership can also influence the performance and success of an organization.

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