

# Understanding the Use of EduTech in Schools in the Philippines: Recommendations for Effectiveness

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Al-Rashiff Hamjilani Mastul  
College of Education  
Western Mindanao State University  
Mindanao, Philippines  
Al-Rashiff.mastul@deped.gov.ph

Claze Therese de Vera\*  
College of Engineering and  
Architecture  
University of Nueva Caceres  
Naga City, Philippines  
claze.devera@unc.edu.ph

Cristina Beltran Jayme  
DepEd Region 9  
Talisayan National High School  
Mindanao, Philippines  
cristinabeltran434@gmail.com

**Abstract**— This article focuses on the utilization of educational technology in schools in the Philippines. The aim of the study is to provide recommendations for the effective use of EduTech in schools. The article takes a qualitative approach in presenting the author's perspective and opinion, supported by relevant literature. Educational technology is a phenomenon that is transforming the educational system of every school in the Philippines. However, there are several barriers to the effective implementation of EduTech, such as lack of infrastructure, teacher training, funding, digital divide, resistance to change, and technical difficulties. The article emphasizes the need for comprehensive and well-funded efforts to support the implementation and utilization of EduTech in schools in the Philippines. The study concludes that it is essential to educate teachers on the use of EduTech to ensure its effective implementation. Schools must also have adequate budgetary allocation to accommodate the use of technologies in instruction, and the digital divide between schools must be addressed to ensure that everyone has equal access to educational technology. Administrators should take the lead in promoting the use of EduTech in schools and creating an atmosphere that influences everyone to make use of these materials. By doing so, teachers and learners will be better equipped with the skills and knowledge necessary to thrive in the ever-evolving digital world.

**Keywords**—acceptance, education, ICT, Philippines

## I. INTRODUCTION

The use of technology in the educational system has been a widespread trend that needs to be adopted in today's modern society. Integrating technology into the current teaching methods has proven to be a powerful educational tool [1]. Gone are the days when instructions are limited to the idea of teacher-centeredness, which limits student participation and interaction.

As we face the new era of instruction, technology has become a tool that can greatly help in the teaching and learning process. When digital learning tools are effectively utilized, it increases students' engagement, improves teachers' lesson plans, and learning is personalized [2]. It allows an individual to explore and discover many opportunities that go beyond the four corners of the classroom. It enables every learner and teacher to be more creative, and globally competitive, and develop a sense of higher-order critical thinking skills [3], [4].

As technology continues to improve and evolve, students need to keep abreast. The P21 framework for 21st Century Learning Skills includes Information literacy, Information and Technology (ICT) literacy, and media literacy. ICT now continues to influence every aspect of human life including but

not limited to education, entertainment, business, workplaces, and industries [5], [6]. Learning and being proficient in using ICT tools in accessing, relating, managing, evaluating, and constructing new knowledge can put them ahead once they apply for employment.

The Philippines is a good avenue to explore the use of technology in schools with its ideal culture, economic development, and progress in terms of tourism and skilled workers [1]. As many industries and companies worldwide are already technologically advanced, there is a need for the country to adapt to the changes and produce learners that possess the necessary skills to be able to give what is expected of them in terms of learning and services [7].

Technology is a gift. It has had a huge impact on the lives of many and has brought many changes to the landscape of education. This tool allows every teacher to deliver their instruction in easier and more creative ways [5]. Integrating technology in the classroom makes their job easier without taking extra time out of their day. Thus, the use of technology in education has had many positive effects on schools.

However, since the Philippines is an archipelago with a vast range of territory producing many schools with a huge number of students, it is a challenge to know the use of technology in all schools. There is a need to study how these materials are being utilized and the effects they have on all learners and teachers. Moreover, the capacity of every school to employ educational technology is important. There is also a need to consider the preparedness of teachers to use these materials and the impact they have had on every student. Hence, the purpose of this study is to gain a deep understanding of the phenomenon of EduTech utilization in schools in the Philippines and provide recommendations for its effectiveness.

## II. METHODS

The article takes a qualitative approach in presenting the author's perspective and opinion, supported by relevant literature. This means that the article does not use quantitative research methods to collect numerical data that is interpreted statistically. Instead, the article focuses more on presenting the author's views and opinions, supported by references or related literature as a source of information or comparison. This approach is one of the common approaches used in writing articles in the social sciences and humanities, especially in qualitative research. In qualitative research, it is important to gain a deep understanding of the phenomena being studied, so

the author often expands their perspective and opinions through analysis and understanding of relevant literature.

### III. RESULTS AND DISCUSSION

#### A. *The implementation of educational technology*

The implementation of educational technology in schools in the Philippines is hindered by various barriers, as highlighted by several studies. These barriers can be broadly categorized into six areas.

Firstly, there is a lack of necessary infrastructure, such as computer labs and internet connectivity, in many schools, which makes it challenging to integrate technology into the classroom. Secondly, teacher training and experience in using technology can be insufficient, leading to ineffective integration into lessons. Thirdly, the cost of educational technology and related resources can be prohibitive for many schools, leading to funding and budget constraints.

Fourthly, there is a digital divide between urban and rural areas, with varying availability and accessibility of technology, exacerbating disparities in educational opportunities and outcomes. Fifthly, some teachers and administrators may resist the integration of technology in the classroom due to a perceived threat to traditional teaching methods. Lastly, technical difficulties and the need for technical support can also pose a significant barrier to the effective integration of educational technology in schools. To address these barriers, comprehensive and well-funded efforts are necessary to support the implementation and utilization of educational technology in schools in the Philippines. Ref. [1] sheds light on the barriers to educational technology implementation in the Philippines.

The authors found that some of the key barriers include the lack of adequate infrastructure and technology resources, limited technical support and training, lack of funding, and limited teacher training and support. Ref. [2] This study investigated the relationship between technology integration and teachers' professional knowledge concerning the International Society for Technology in Education (ISTE) standard. The authors found that a lack of ICT (Information and Communication Technology) literacy, limited access to technology resources, lack of training and support, and lack of motivation were some of the major barriers to technology integration in the Philippines. This is similar to the results of the study by Ref. [6], which revealed that students encountered barriers such as the difficulty of clarifying topics and discussions with the professors, poor internet connection, and lack of study area.

These studies demonstrate that there are several barriers to the effective implementation of educational technology in the Philippines, including the lack of resources, support, and training. To overcome these barriers, the authors suggest providing additional support and resources to teachers, improving ICT literacy, and providing ongoing training and professional development opportunities to help teachers integrate technology into their teaching practices.

#### B. *The effectiveness of online learning*

The survey conducted by Statista found that 30% of Filipinos perceive that the current distance learning model is 20-50% effective as it was implemented as a precaution during the pandemic. Also, the study by Ref. [8], stated that 412 students said that e-learning is equally effective as face-to-face classes and that they are more satisfied with online instruction

rather than modular instruction. However, both students and teachers perceive online learning as a difficult modality.

The study by Ref. [1] explores the factors affecting the adoption of e-learning technology among college students in the Philippines. The study found that a combination of education and technology can create dynamic teaching and learning experiences, but it also highlights the need to address the challenges in the adoption of e-learning technology in the Philippines.

Another study by Ref. [9] explores the factors influencing the adoption of e-learning among university lecturers in Ghana. The study found that the adoption rate of e-learning in the context of developing countries is still low and several factors influence its adoption.

The study by Ref. [10] examines the adoption of e-learning management systems in selected private universities in Nigeria. The study found that despite the availability of information system models for e-learning management systems, its theoretical foundations have not yet captured the social factors influencing the adoption of e-learning.

Finally, the study by Ref. [11] explores the technological, organizational, and environmental determinants of e-learning adoption in the University of Ghana. The study found that several factors influence the adoption of e-learning in universities and highlight the need to address these factors to enhance the effectiveness of e-learning in developing countries. These studies suggest that the effectiveness of online learning, as well as in other developing countries, is influenced by various factors such as technology, organization, and environment. Addressing these factors can enhance the adoption and effectiveness of e-learning in these countries.

#### C. *Student perception toward learning technology*

The COVID-19 pandemic has greatly impacted the education sector and as a result, many students in the Philippines and other countries have had to resort to online and distance learning. Several studies have been conducted to determine students' perceptions of online learning during the pandemic. A study conducted by Ref. [12] found that the perceptions of 258 freshmen students of the Polytechnic University of the Philippines' Ragay, Camarines Sur Branch on the use of online and distance learning were mostly positive.

Other studies, such as the ones conducted by Ref. [4], [13]–[16] have also explored the perceptions of online learning among students during the pandemic. The findings of these studies suggest that online learning has become an effective alternative to traditional in-person learning during the pandemic. The students have shown positive motivation and learning strategies in using educational technologies and have been able to adapt to the new normal era of online learning [6], [17], [18]. Also, students' acceptance has influenced their engagement thus students tend to be resourceful. However, some students have also reported challenges and difficulties in adapting to the new learning environment. For example, despite the perception that online learning is beneficial, students accepted that the technology is not easy to use. Overall, the studies suggest that students' perception of learning technology in the Philippines during the COVID-19 pandemic has been generally positive.

The integration of Information and Communication Technology (ICT) into the educational system of the

Philippines has been a focus in recent years. The state of ICT integration into the Philippine educational system has been highlighted in various studies, including a paper by QPV Tomaro, which aimed to highlight the challenges, efforts, and possible solutions in integrating ICT into the educational system of the Philippines. The study by Bonifacio highlights various initiatives of the Philippine government as it embraces ICT in education. However, it reiterated that these initiatives haven't insured that educators utilize these facilities in their teaching strategies. Another study, by Ref [1], [19], [20] noted the promotion of the use of ICTs in education by governments in the Asia Pacific region over the last decade.

Despite the efforts being made to integrate ICT into the Philippine educational system, there are still challenges that need to be addressed. Ref. [5] noted that while progress has been made in the use of ICT in teaching and learning, there are still hindering factors that need to be addressed, including insufficient infrastructure and lack of resources.

Similarly, a review of literature by Ref. [1], [6] highlighted the need for explicit policies and clear guidelines to support the integration of ICT into the educational system. The integration of ICT into the Philippine educational system has been a focus in recent years, with efforts being made to promote its use in teaching and learning. Despite these efforts, there are still challenges that need to be addressed, including insufficient infrastructure and lack of resources, and the need for explicit policies and clear guidelines.

#### D. The teacher acceptance, perception, and optimism toward educational technology

Based on the research studies listed, it appears that the acceptance, perception, and optimism of teachers toward educational technology in the Philippines are varied. Some of the studies suggest that factors such as the teachers' concerns, barriers, intrinsic incentives, and personal perspectives play an important role in deciding how they will integrate technology into the classroom. Other studies have investigated the determinants of teachers' intention to use technology and the relationship between teachers' characteristics and their attitudes toward technology integration.

For example, a study conducted by Ref. [4], [7], [15], [20] tested a research model using the Technology Acceptance Model (TAM) to determine the factors of teachers' intention to use technology. Another study by Ref. [7], [19], [21], [22] investigated the relationships between the characteristics of teachers and their attitudes toward technology integration in their courses. The study found that technology use is becoming increasingly important in the educational arena, but for the integration to be successful, it is essential to understand the factors that influence the teachers' attitudes toward it.

Similarly, a study by [3], [7], [22] emphasizes the relationship between teachers' attitudes and acceptance toward technology and its successful pedagogical use. The study found that several factors determine teachers' intention to use technology such as subjective norms, computer self-efficacy, and perceived ease of use. In another study by Ref. [7], [21], [23] factors like perceived usefulness, teacher's readiness, and perceived ease of use impact teachers' intention to use online learning.

#### IV. CONCLUSION

Educational technology is a phenomenon that is transforming the educational system of every school, with a tremendous impact on curricula and a positive effect on both

learners and teachers. It is high time that schools embrace the effectiveness of educational technology and become more technologically advanced in the future. In the Philippines, it is reasonable to conclude that teachers need to be better equipped with various technology training before implementing it in the field. Educating teachers on the use of educational technology is crucial. Additionally, schools must have adequate budgetary allocation to accommodate the use of technologies in instruction; insufficient or lack of funds will be a significant hindrance to its application. There is a digital divide between schools, indicating that not everyone has equal access to educational technology. Therefore, all schools should have equal opportunities to ensure that no one is left behind. However, not everyone is ready for change or willing to explore new trends in the educational system and adopt new approaches in teaching. Many are still comfortable with the traditional way of teaching, making them hesitant to try something new and discover its positive effects. Administrators should take the lead in promoting the use of educational technology in schools. They must create an atmosphere that influences everyone to make use of these materials that will significantly benefit everyone. By doing so, teachers and learners will be better equipped with the skills and knowledge necessary to thrive in the ever-evolving digital world.

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