
Emerging Technological Approaches in International Education: A Synthesis of Review of Literatures

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Abstract

The purpose of this review article was to provide a deeper understanding of the emerging technological approaches in education making use of a synthesis of review of literatures approach. Specifically, this study aimed to do the following: present the emerging technological approaches in education; and present the common themes such as advantages and disadvantages of technology in education. There were six (6) articles reviewed in this paper. The different technological approaches reviewed were found out to have more positive effects than negative ones as discussed in this paper. Provided that technology is used properly and accordingly inside the classroom, it will make teaching and learning more effective, fun, and meaningful for both teachers and students.

Keywords: Emerging Technological Approaches, International Education, Education Technology

1. Introduction

Building the foundation for our future and helping underdeveloped countries both depend heavily on education. Nations around the world have started a variety of national reform programs to address the need for 21st century skills to restructure their educational system to produce a competitive national human capital force on a global scale (Chan, 2004 and Malik, et. al., 2021). Education, as we know it, produces the workforce of the country and generates experts in different fields. Education has also been and is being revolutionized by technology, altering when, where, and how students' study while also empowering them along the way.

Over the past few years, we have come across the newest, most amazing technologies being used to improve education, may it be local or at the international level. New technologies for teaching and learning have exploded and have been introduced to us. According to the World Bank, Technology played and continues to play an essential role to deliver education to the students outside of school. Commendably, all countries were able to deploy remote learning technologies using a combination of TV, Radio, Online and Mobile Platforms.

According to Walden (2021), students need to be prepared for an ever-changing world where they can expect to have multiple careers over their lifetime. Emerging technology gives them the skills to succeed in any field or industry by teaching them critical thinking and problem-solving skills and giving them access to information. Aslan (2021), Lim, et. al. (2007) and Carstens, et. al. (2021) all agreed that science and technology have made significant strides not only in education but in all aspects of human lives. People's lives have been impacted by

advances in science and technology, and technology has gained an important position in human life. Technology, which is so integral to modern life, has influenced educational research as well. Particularly due to technology advancements, it is now important to assemble teaching and learning environments using technology.

The purpose of this review article is to provide a deeper understanding of the emerging technological approaches in education making use of a synthesis of review of literatures approach. Specifically, this study aimed to do the following:

1. Present the emerging technological approaches in education.
2. Present the common themes such as advantages and disadvantages of technology in education.

2. Methodologies

Three of the research articles reviewed made use of the mixed method approach. According to Terrell (2012), mixed methods research combines elements of quantitative research and qualitative research in order to answer research questions. Mixed methods can help a researcher gain a more complete picture than a standalone quantitative or qualitative study, as it integrates benefits of both methods. According to Lim, et. al. (2007) and Carstens, et. al. (2021), this method of connecting quantitative and qualitative data allowed for confirmation and triangulation offered confirmation through more details and helped spark new ideas. One of the studies made use of experimental research design which looked through the pre-test and post-test scores of the respondents after conducting the design for 14 weeks. Experimental research is a systematic model used by researchers to manipulate one or more variables and to control the rest of the variables (Özdemir & Dođruöz, 2020).

The respondents of the different research articles were teachers/educators, students, and school heads. After obtaining the data needed for the research, thematic analysis was done. A set of questionnaires was also prepared by the researchers in conducting the studies.

These were the articles reviewed in this study:

Author	Publication Date	Title of the Study	Publishing Company
Aslan, Serkan	2021	The Effect of the Flipped Classroom Model on Pre-Service Teachers' Digital Literacy and Digital Pedagogical Competencies.	Educational Policy Analysis and Strategic Research, V16, N4, 2021 © 2021 INASED 73
Carstens, Kaite J. et. al.	2021	Effects of Technology on Student Learning School of Teaching and Learning	College of Education, Illinois State University, Normal, IL USA
Chan, Wendy W. Y.	2004	International Cooperation in Higher Education: Theory and Practice.	DOI: 10.1177/1028315303254429 Journal of Studies in International Education 2004 8: 32

Lim, Doo Hun, et. al.	2007	Online Vs. Blended Learning: Differences in Instructional Outcomes and Learner Satisfaction.	ERIC Journal
Malik, N. K. et. al.	2021	International Best Practices of School Review Processes and Perceptions of Principals on School Outcomes and Improvement. International	Journal of Pedagogical Innovations ISSN 2210-1543 Int. J. Ped. Inn. 9, No. 1
Mehmet, Ulker.	2019	Educational system and media content in the Republic of South Africa.	Academic Journals. Vol. 14(15), pp. 533-540, DOI: 10.5897/ERR2019.3777 Article Number: 0EC460861918 ISSN: 1990-3839

3. Results and Discussion

This part of the paper presents the results of the study through the themes that emerged after the research articles were studied and reviewed. It will specifically present some of the emerging technological approaches in education. This is followed by a discussion of the themes. The following themes have been seen in the data analysis and will be the flow of the discussion. (1) Advantages of Technology in Education. (2) The Role of Teachers in the Use of Technology. (3) Disadvantages of Technology.

3.1 Technology devices in the classroom

In the study of Carstens, et. al. (2021) and Lim, et. al. (2007), they both looked at the importance of employing technology inside the classroom. The goal of the study of Carstens, et al. (2021) was to learn more about the benefits and drawbacks of using technology in the classroom, whether it was helpful or it is causing harm to our students. Data indicate that participants generally seem to regard technology as a tool that engages students and improves learning. They emphasized how different uses of technology exist. The usage of technology in the classroom comes with its many perks according to the respondents of the study. With the inclusion of technology in their district, the teachers are opening their students up to so much more information than they could do with the resources within their classrooms. Technology is how kids learn in the world today and it is what they feel most comfortable using. Technology provides a high student interest, allowing them to engage in their learning at multiple levels. With the growing amount of technology, teachers feel that students have a good deal of choices when studying and allows them to be self-sufficient learners in and out of the classroom. These were all according to the respondents.

3.2 Flipped Classroom Model

According to Aslan (2021), the typical classroom model is very different from the flipped classroom model. Using the "blended learning model" of a flipped classroom under the direction of the teacher, using the conventional knowledge that the teacher has imparted, the classroom is shifted to the online platform, and the assignments that must be completed outside

of the students are moved inside the classroom (Aslan, 2021; Demiralay and Karataş, 2014). Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter (www.flippedlearning.org).

Result of the study of Aslan (2021) concluded that the flipped classroom model was effective on the digital literacy levels and digital pedagogical competencies of prospective teachers. Planning teaching-learning process based on the flipped classroom model in teacher training institutions may improve the digital literacy and digital pedagogical competencies of prospective teachers. In this way, teachers equipped with 21st century skills can be trained.

3.3 Advantages of Technology in Education

In both studies of Mehmet (2019) entitled Educational system and media content in the Republic of South Africa and Aslan (2021) entitled The Effect of the Flipped Classroom Model on Pre-Service Teachers' Digital Literacy and Digital Pedagogical Competencies, both noted that incorporating technological methods into the teaching-learning process has several advantages. In this respect, it is crucial to employ technology-based teaching and learning strategies in programs for teacher preparation and for doing research in this line. Mehmet (2019) found out that the analysis results demonstrated a significant difference in favor of the posttest scores of the pre-service teachers in the experimental group, the experimental group being exposed to technology-based learning that is the flipped classrooms. Rested on this result, it may be wise to mention that the flipped classroom model applied in the experimental group had a significant effect on the pre-service teachers' digital literacy and digital pedagogical competences. The flipped classroom model is a student-centered teaching-learning approach based on technology. In here, technology once again proved that emerging technological approaches could really benefit education. Another one is in the study of Carstens, et. al. (2021) wherein they presented the advantages of technology. According to their study, the usage of technology in the classroom comes with its many perks according to teachers in the district to where they conducted their study. With the inclusion of technology in the district, the students are opened to so much more information than the school could do with the resources within the classrooms. Technology is how kids learn in the world today and it is what they feel most comfortable using. Technology provides a high student interest, allowing them to engage in their learning at multiple levels. With the growing amount of technology, teachers feel that students have a good deal of choices when studying and allows them to be self-sufficient learners in and out of the classroom.

3.4 The Role of Teachers in the Use of Technology

In all research articles, it was discussed how important is the role of the teachers in the use of these emerging technological advances in international education. Aslan (2021) and Carstens, et. al. (2021) mentioned that in addition to becoming digital natives, teachers must also exhibit digital pedagogical competencies and they should become technology literates. Digital pedagogical competency is defined as a teacher's foundational knowledge and abilities regarding the appropriate use of digital tools in the teaching process. The top priority as educators is to inspire learners to pursue their education. The more that the students are driven, the more probable it is that they will remember what they have learned. According to research, the use of technology encourages pupils to learn in the ever-expanding technological

environment. And that is why, emerging technological approaches could really lead to motivation in the teaching and learning process.

3.5 Disadvantages of Technology

While these studies mostly focused on the positive side of using technology in education, Carstens, et. al. (2021) presented negative effects of technology. According to their findings, despite the fact that technology offers students access to more knowledge more quickly, there is also a lot of information that is improper or unfit for a school environment. It could be challenging for teachers to keep an eye on things or to monitor them. The issue with technology in the classroom is that it frequently fails to function when it is needed, there are always glitches, and the equipment in the classroom is not always responsive, and the Wi-Fi is "at the mercy of the server", this is according to the study. When analyzing the poll findings, it became clear that teachers are more irritated by technology when it does not perform as it should. One commenter explained how technology problems can cause a delay in teaching period. Also, in the study of Lim (2007) entitled *Online Vs. Blended Learning: Differences in Instructional Outcomes and Learner Satisfaction*, it was also found out that while online instruction addresses the issue of time and place constraints on delivering learning experiences to distant learners and allows flexible learning modes so students can control their learning path, pace, and contingencies of instruction, certain pitfalls of online instruction have been identified regarding its limited capability to engage learners in learning events unless the learners were self-motivated, were active learners and possessed strong organizational skills in their learning habits. Learners also report the lack of a sense of belonging or community during online learning that prevents the development of shared feelings and emotions between learners and instructors. It was also discussed that trainings for teachers should be done to update them with the latest trends in technological approaches, which is sometimes a neglected part in the process. The findings in Carstens, et. al. (2021) study showed that more trainings for teachers and students are necessary to better implement technology in the classroom.

4. Conclusion

The findings of this review article provided a deeper understanding of the emerging technological approaches in education. The different technological approaches mentioned were found out to have more positive effects than negative ones as discussed in this paper. Provided that technology is used properly and accordingly inside the classroom, it will make teaching and learning more effective, fun, and meaningful for both teachers and students.

5. Recommendations

It is crucial that the education sector keep up with the pace of time and technological innovation. By utilizing all of the cutting-edge technologies currently on the market, schools and other educational institutions can enhance the learning and comprehension processes of their learners. Because technology empowers students by giving them control over their learning process, making education relevant to their digital lives, and preparing them for the future as they move toward individualized learning, its use and consumption in schools should be maximized. Students are motivated to become problem solvers, critical thinkers, collaborators, and creators thanks to technology and access to resources outside of the classroom. Students who have effectively incorporated technology into their classrooms grow to love learning for the rest of their lives. And so, with all these being said, the emerging

technological approaches in international education should be used and reviewed or assessed properly so they can contribute the maximum both to the teachers and the learners and eventually making the teaching-learning process as effective as it can be.

Areas for future research may include other technological approaches used in education.

Conflict of Interest

The researcher declares that the review article was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Above all, to God be the highest honors and praises!

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