

A Review: The Effectiveness of Using TikTok in Teaching and Learning

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Abstract: Social media platforms such as YouTube, Facebook, Telegram, and so on have influenced pedagogical practices in improving student learning. However, there is limited literature on the use of the TikTok application in teaching and learning and whether this platform helps students or is only for entertainment. The TikTok application is one of the social media platforms for sharing short videos that are rapidly increasing in popularity. Therefore, this study reviewed recent literature on the effectiveness of using TikTok in teaching and learning from primary to higher education learning. Seven research articles were identified as relevant to this review through the predetermined criteria. The purpose, method, subjects and outcome of the studies were reviewed. It indicated that a complex subject like chemistry could attract the public to enjoy learning chemistry at home and improve undergraduate students learning. Other than that, learning skills like dance and sports through TikTok also positively impacts students. Language subjects like English as a Second Language utilise TikTok to enhance students' listening, writing and comprehension skills. Future educators in primary, secondary, and higher education may think about integrating TikTok into their teaching and learning strategies to stimulate the creation of original videos that adhere to instructional design principles.

Keywords: TikTok, Education, Effectiveness, Review

1. Introduction

Global Digital Report 2021 highlights that the total number of social media users worldwide has been raised to 4.20 billion, and it continues to show an increasing trend. Today, the use of social media has penetrated many segments of society, including education. The use of social media in education is believed to increase students' knowledge as it facilitates a knowledge-sharing environment (M'antym aki & Riemer, 2016). The ability of social media that enables the students to communicate with peers and experts in the network and its potential to reach a mass audience mainly influences the students to use social media in their learning activities. Students mostly use social media to search for information and collaborate with others (Rasheed et al., 2020). Therefore, using social media is expected to increase knowledge sharing among students, which can lead to improved learning performance.

Social media can be classified into four categories known as experience- and resource-sharing tools, media-sharing tools, social networking tools and communication tools (Zgheib & Dabbagh, 2020). Social media examples include Facebook, Twitter, YouTube and TikTok (Zgheib & Dabbagh, 2020; Salehudin, Arifin, & Napitupulu, 2021; Dean, 2022). Every social media platform has a unique set of advantages that

help to support the learning process. For example, Facebook and Twitter support both formal and informal learning by exposing students to learning methods through virtual communities. This helps learners improve their communication skills, motivation and ability to work together. Further, YouTube is a media-sharing tool that allows learners to create and share videos, upload and tag photos, leave comments on photos and videos, summarise lecture notes, and record demonstrations. (Zgheib & Dabbagh, 2020).

Foremost, TikTok is one of the social media applications that became a global success, where it recorded more than 3 billion downloads worldwide as of 2022 (Dean, 2022). “The Tik Tok application is an application to create and share various short videos in vertical format, which is played by simply scrolling the screen up or down” (Herlisya & Wiratno, 2022). Zaitun (2021) surmised that TikTok delivers a promising platform to be used as an interactive learning medium that can enhance students learning performance, especially their speaking and writing ability. The internal feature of TikTok is enabled this application is to be used as a learning tool in many courses. This study reviews the effectiveness of using TikTok as a pedagogical tool from primary to higher learning institution levels.

The use of TikTok is one of the important areas of research in the educational context. Many empirical studies were conducted to identify the effectiveness of using TikTok in the educational context (Adnan, N. I., Ramli, S & Ismail, I. N, 2021; Niyomsuk & Polyiem, 2022; Paloma Escamilla- Fajardo, Alguacil & López-Carril, 2021). However, there are limited review studies on the effectiveness of using TikTok in the educational environment. Thus, there is a dire need to review the effectiveness of using TikTok as a pedagogical tool in the educational context. This review is believed to contribute to expanding the understanding of stakeholders in educational institutes about the effectiveness of using TikTok in teaching and learning activities.

2. Methodology

This review aims to examine the current research literature regarding the effectiveness of using TikTok as a pedagogical tool for the years 2017 to 2022 in the context of primary to tertiary education. The authors conducted the search through Google Scholar, Elsevier, Scopus, IEEE and Proquest databases. In particular, this review intends to address the following broadly focused research question: “What is the effectiveness of using TikTok as a pedagogical tool at the primary to tertiary education level?”

2.1 The search procedure

The articles included in this review were selected through a comprehensive search of publicly available literature, mostly through manual electronic searches of the Google Scholar, Elsevier, Scopus, IEEE and ProQuest databases. The keywords “TikTok video, educational tools, social media application, short video, ICT tools, learning, teaching, digital learning, mobile learning, education” were used to identify the articles.

Articles for the review were selected based on the following criteria (a) the article was published between 2017 and 2022, (b) the article was published in English, and (c) the article related to the use of TikTok as a pedagogical tool in primary to tertiary education level. Based on the criteria, 7 studies from 6 prominent peer-reviewed research journals and one indexed conference proceeding were identified as eligible for the review and were comprehensively analysed by the authors. Table 1 shows the summary of the findings.

2.2 Data analysis

At first, the authors read the abstract of each article to guarantee the article met the predetermined criteria. Then, the entire article was read to extract the content that was relevant to the research question of this review. The findings were tabulated based on the purpose, methodology, courses and outcome of the study (Table 1).

3. The Effectiveness of Using Tik Tok in Teaching and Learning Activities

Past studies have reported that TikTok has excellent potential to be used as a pedagogical tool. TikTok is believed to increase students' cognitive and affective learning performance. For instance, Escamilla-Fajardo, Alguacil and López-Carril (2021) reported that using TikTok among sports science students promoted student motivation, created an engaging learning environment, and encouraged the development of skills such as creativity and curiosity. The researchers argued that TikTok is a suitable medium for teaching expressive courses with creative content such as movement and music.

Similarly, Niyomsuk and Polyiem (2022) admitted that integrating TikTok in teaching Thai traditional dancing art improved the Grade 7 students learning performance. TikTok has created satisfying learning experiences among students. This study delivers empirical evidence that TikTok could deliver promising results to courses involving practical skill development.

TikTok is also found to be a useful tool to learn a language. For instance, Adnan, Ramli and Ismail (2021) highlighted that TikTok could be used as a comprehensive tool for improving English second language (ESL) students' listening skills. According to the authors, learning English via TikTok, which delivers interactive listening, is believed to engage students in tasks that demand them to negotiate meaning and immerse them in realistic and meaningful dialogue. TikTok presents words and visuals at the same time. It enhances students' understanding and enables them to understand new English words easily. The authors also investigated the students' perspectives on the benefits and defects of incorporating TikTok into classroom learning. It was found that the students preferred the new Tik Tok video method compared to learning from the traditional mind-map due to the variety and interesting features of the Tik Tok app. The authors also claimed that the utilization of TikTok relates to five of the principles in multimedia learning based on Mayer's (2002). This showed the effectiveness of Tik Tok as a learning tool that provides students with a better learning experience.

Meanwhile, Yunus, Zakaria and Suliman (2019) highlighted that using social media such as TikTok in the ESL classroom breaks the barriers in learning English writing skills and converts it into a constructive learning atmosphere. The authors reported that the use of social media assisted the rural primary students to improve their English writing skills as most of them felt that writing skill is the most challenging part of learning. Integration of TikTok enabled the students to learn better and improve their writing process and performance. This is because TikTok assisted the students to learn new things and gain the appropriate knowledge to scrutinize their writing skills.

Other than language learning, a study by Hayes, C., Stott, K., Lamb, K. J., & Hurst, G. A. (2020) was conducted by utilizing TikTok videos in chemistry learning by undergraduate students. Interestingly, using TikTok not only helps undergraduate students learn chemistry but also enhances public engagement in chemistry and science education. The undergraduate students develop 16 educational videos and uploaded all of the videos in one account, namely, "The Chemistry Collective", and have gained approximately 8,500 views. It was found out that the viewers of these Tik Tok videos strongly agreed that they had learned something new about chemistry since watching these videos and had an increased interest in chemistry. This indicates that learning chemistry via Tik Tok also can engage the public that learning chemistry can be enjoyable and be performed at home in daily life.

A study by Radin, A. G., & Light, C. J. (2022) used the TikTok platform as an adaptation to the challenge of teaching during the pandemic time. TikTok was used as a teaching method in the second semester of a three-semester CURE sequence at Binghamton University. Students were challenged to create TikToks about the research being done in the lab or their team's proposed research projects. Students indicated that teaching via TikTok helped learn new content remotely before entering the lab. They especially valued #labfails (laboratory mistakes or challenges) shared by undergraduate peer mentors, both to learn from and to feel less isolated during the difficulties of research setbacks.

This shows that TikTok can be helpful in teaching about research in the lab to undergraduate students.

Another study by Rimasari Pramesti Putri (2021) used TikTok during the pandemic for her dance course class. She aimed to provide online learning innovations in her course. It was found that the TikTok application can be used as a learning medium to enhance the students' creativity and also develop their digitalization skills during a pandemic. It also found that students are able to use technology in learning

dance, express their creative dance ideas in digital form and increase the power of exploration and improvisation in creativity. She also said that by publishing videos on the TikTok application, the students can show their dance originality and can be followed by the public.

Table 1. *Purpose, Methodology and the Outcomes of the study*

Authors	Purpose	Methodology	Course; Sample	Outcomes of the study
Paloma Escamilla-Fajardo, Alguacil & López-Carril (2021)	Explore the educational experience and pedagogical effect of using TikTok in the sports science course	Mixed method	Sports Science; undergraduate	TikTok promoted student motivation, created an engaging learning environment, and encouraged the development of skills such as creativity and curiosity.
Niyomsuk Polyiem (2022)	& Investigate the effectiveness of TikTok as a learning tool and investigate students' satisfaction	Quantitative	Thai Traditional Dance; primary students	TikTok increased students learning performance and satisfaction
Adnan, N. I., Ramli, S & Ismail, I. N. (2021).	Investigate the usefulness of TikTok as an educational tool in English course	Quantitative	ESL; undergraduate	TikTok could be used as a comprehensive tool for improving the listening skills of English second language (ESL) courses students
Yunus, Zakaria Suliman (2019)	& Investigate the potential use of social media (TikTok) in improving writing skills among primary students.	Quantitative	ESL; primary students	TikTok assisted the students to improve their English writing skills
Hayes, C., Stott, K., Lamb, K. J., & Hurst, G. A. (2020)	Utilizing TikTok and Systems Thinking to Facilitate Scientific Public Engagement and Contextualization of Chemistry at Home	Quantitative	Chemistry; undergraduate, public	The viewers of these TikTok videos strongly agreed that they had learned something new about chemistry since watching these videos and had an increased interest in chemistry.

Radin, A. G., & Light, C. J. (2022).	Investigate the use of TikTok to teach science communication skills	Qualitative	Science communication; undergraduate	Students indicated that teaching TikToks helped learn new content remotely before entering the lab.
Putri, R. P. (2021)	Utilize TikTok during pandemic for dance course	Qualitative	Dance; undergraduate	The results of this study indicate that students can apply technology in

learning dance, express their creative dance ideas in digital form and increase the power of exploration and improvisation in creativity

4. Conclusion, Discussion and Suggestions

From the seven papers reviewed above, most of the studies applied quantitative research and utilized questionnaires to collect data. Only one preferred to use a mixed-method study. The other two studies used qualitative methods through their research. The analysis of the subjects that applied TikTok in their teaching and learning are Sports Science course, English course including listening and writing skills, Science course like chemistry and the ethics in the Science Lab and also a dance course. From this study, we can conclude that various courses utilise TikTok to enhance their learning and received positive feedback on their use of TikTok in education.

Furthermore, looking at the excellent total views (8, 500 views) of complex topics like chemistry that may be found boring for students showed that their videos could engage students and the public that learning chemistry is enjoyable and they can do it using materials that can be found at home. This showed that students could produce creative and fun educational videos that can engage students and the public to learn chemistry. We also can conclude that TikTok can be a source of knowledge to learn science in a short time.

One of the best features of TikTok is the videos are short, easy to create and convenient to share. This may produce students or teachers that are creative in delivering their learning and share to the public. In the future, educators in primary and secondary schools and higher education may consider incorporating TikTok into teaching and learning practices that may encourage producing a creative video that follows the instructional design principles.

In this study, we only reviewed the aims, methods of research and the outcome of the study. For future research, the teaching strategies implemented when using TikTok in teaching and learning also can be analysed.

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