Systematic Review on Utilization of Whatsapp in Education

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Systematic Review

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Abstract

In this era, digital education technology, information and communication technologies have changed learning. WhatsApp group education has emerged because it can take place anytime and everywhere as compared to an offline approach. Students are slowly gaining confidence in digital education, but there are also drawbacks, associated with cheating and misuse of educational information. The aim of this research is to examine how WhatsApp can be used in the context of education. This paper presents a thorough analysis of the use of WhatsApp in education, drawing upon 14 relevant studies published from 2014 to 2020. The results reveal that students are positive about utilising WhatsApp groups for learning. This paper is an attempt to bring conceptual clarity about utilization of WhatsApp groups in education and to suggest technical security measures that can be adopted.

INTRODUCTION

Technology and internet have given birth to digital education. Digital education includes online education, but is not confined to online education. In addition to mobile and smart phones, iPads, PCs, and laptops, there are several channels available for communication, including SMS (Short Message Service), MMS (Multimedia Messaging Service), Instagram, Twitter, and email. WhatsApp is a mobile app that can function on almost all modern devices and operating systems. This particular application has been available for obtaining since 2010. This app is rated as the most downloaded in 127 countries with over 350 million users (Jimoyiannis et al., 2013); on a daily basis, around 31 billion messages are sent on average (Biolcati, 2010). Social networking services (SNSs) are software platforms that allow individuals and groups to interact and establish social relationships (Cetinkaya & Sutcu, 2019). Mobile tech is popular for socializing and becoming more normalized (Bax, 2011) in society, have normally been used in large-scale worldwide education by academicians in higher education. Smartphones have changed traditional classroom conventions, and interactive applications are used for students' education. Digital education ensures approaching students in a timely, relevant and cost-effective manner. Permission-based education messages are powerful because based on need or interest, the students themselves choose to receive the WhatsApp message, text messages or web feeds and there is thus high utilization. On the other hand, if students are not interested and irrelevant messages are delivered, there may be low utilization.

AIM OF THE STUDY

The aim of this research is to examine how WhatsApp can be used in the context of education. This paper presents a thorough analysis of the use of WhatsApp in education, drawing upon 14 relevant studies published from 2014 to 2020.

RESEARCH QUESTION

The following research question was formulated: How does WhatsApp support student learning?
BACKGROUND OF THE STUDY

The study has identified gaps and differs from others. As far as I know, there has not yet been a study reviewing the potential use of WhatsApp groups in the education sector; therefore, the investigator has reviewed relevant theory and research studies on utilization of WhatsApp in education in both India and abroad. With regards to digital education, most of the studies deal with online learning, e-learning, and computer learning. This review has focused on usage of WhatsApp for learning, integrating technology in higher education, and e-learning. But little is known about how WhatsApp can be used in education. This gap is the focus of the researcher’s study. Therefore, the researcher identified a gap in understanding of the utilization of WhatsApp in education.

WhatsApp helps users stay connected and maintains relationships (Dunne et al., 2010), furthermore, creating new connections is also a possibility (Raacke & Bonds-Raacke, 2008). WhatsApp is commonly used for learning about events, but it can also be used for surveillance and social surfing to gather information about others (Karapanos et al., 2016; Joinson, 2008; Urista et al., 2019). New research shows that people seek satisfaction for enjoyment, distraction, and relief from monotony (Dunne et al., 2010). The WhatsApp application was used worldwide during the COVID-19 pandemic by academicians.

WhatsApp was founded in 2009 by Brian Anton and Jan Koom, both former Yahoo employees. In April 2013, Google acquired WhatsApp, which now has over 400 million active monthly users in more than 180 countries (Barhoumi, 2020). WhatsApp is a free messaging and calling app that is available on phones worldwide. It was created as an alternative to SMS and is now widely used for sending and receiving a variety of media including text, photos, videos, documents and location. Additionally, WhatsApp allows users to make voice calls securely and reliably to make voice calls securely and reliably. WhatsApp has the potential to enhance the learning experience (Abraham & Fanny, 2019). Although it differs to some extent from other social media platforms (Boyd & Ellison, 2007) it is not a social network. Social networks have become a fundamental part of users’ daily lives and are often used in education. Studies indicate that social networks have both positive and negative effects on various variables, including communication, motivation, social interaction, and academic success. These effects are dependent on the purpose and form of the use of social networks in education. These tools, each with unique features for learning, have the potential to enhance cooperation, increase social interaction, interest, motivation, sense of belonging, academic success, student-teacher and student-student interaction. They also support learning anytime and anywhere, provide peer support and feedback, and facilitate the sharing of information in education (Cetinkaya, 2017). According to, Biolcati (2010) four main educational uses of WhatsApp groups: communication with students, fostering a social atmosphere, facilitating dialogue and sharing between students, and using it as a learning platform. The technical benefits of WhatsApp include simplicity, low cost, availability, and immediacy. In addition, there are educational advantages such as creating a pleasant learning environment and getting to know fellow students better, which has a positive influence. WhatsApp also increases access to learning materials, teacher availability, and allows for learning to continue beyond class hours.
Using smartphones for communication in education can be challenging. Some students don't own smartphones, while teachers may be overwhelmed by the number of messages. Language barriers and unrealistic expectations from students can also cause educational issues. Digital communication has become popular for students and teachers. Channels such as e-mail, SMS, Facebook, Twitter, and WhatsApp provide opportunities for learning. Each tool has different characteristics that affect its suitability. These tools have different characteristics that can affect their suitability for learning (Boyd & Ellison, 2007, Calvo et al., 2014). WhatsApp is a very popular platform in India but is also extensively used as an instant messaging (IM) tool worldwide (Ojedeji, n.d.). Smartphone users can use this multitasking instant messaging app that relies on internet connectivity to transmit content (Biolcati, 2010). Recently, this platform has enabled real-time exchange of various media including text, videos, photos, location, documents, status updates, voice calls, and video calls (Karapanos et al., 2016). As of July 2017, it had over 1.3 billion monthly active users worldwide, making it one of the most popular messenger platforms for smartphones (Palareti et al., 2016). As of February 2017, over 200 million monthly active users in India use the mobile messaging platform (Zumstein & Hundertmark, 2018). The growing popularity of smartphones has enabled the widespread use of WhatsApp (Duffett, 2017), leading to increased information sharing across various industries including the service sector (Agrawal & Mittal, 2019).

WhatsApp groups are used as a vehicle for the sharing of messages and the application is fast becoming an important educational tool. Digital communication has become common among students and teachers in recent years, through channels such as email, SMS, Facebook, Twitter, and WhatsApp. However, each tool has unique characteristics that impact its suitability for learning (Biolcati, 2010; Tawiah, 2014). Kustijono & Zuhri (2018) examine the effectiveness of using Facebook and WhatsApp in developing critical thinking skills such as analyzing, evaluating, applying, generating ideas, and expressing ideas (clarity, accuracy, relevance, depth, and logic). They also reviewed how students find information from multiple sources, share experiences, and express ideas. According to a study by Cetinkaya & Sutcu (2019), sharing pictures with texts or audio files on WhatsApp are effective in helping students learn. This method of using instant messaging for academic purposes provides opportunities for students to interact collaborate and share knowledge (Barhoumi, 2020). Teachers and students can communicate through WhatsApp to support the learning process (Biolcati, 2010; Yudhiantara & Saehu, 2017). As a tool for learning, WhatsApp enhances online collaboration and cooperation and offers several educational advantages (Amadi et al., 2019). WhatsApp in learning has varying impact and is effective for language education (Cetinkaya, 2017). Collaborative learning via social media has positive effects Ikeguchi, (2008). It's used to coordinate meetings and discuss coursework (Yeboah & Ewur, 2014). Digital education with mobile tech is now common (Inan & Lowther, 2010; Barhoumi, 2020). Mobile tech is widely used in online instruction worldwide (Jimoyiannis et al., 2013; Barhoumi, 2020). Combining digital education with face-to-face lectures has been proven to be more effective for students. With the advancement of technology, students now have more opportunities to interact with their teachers, classmates, and course content (Rau et al., 2008; Vaughan & Lawrence, 2013; Robles et al., 2019). Both teachers and students are adapting to new ways of learning, communicating, and collaborating with each
other (Resta & Laferrière, 2007). The integration of educational mobile technologies with microprocessors is transforming traditional classroom teaching (Subhash & Cudney, 2018; Robles et al., 2019). These new educational tools provide students with more options and opportunities for learning in online instruction settings, particularly in tertiary institutions (Susilawati & Supriyatno, 2020; Griesemer, 2013; Makoe, 2010; Rambe & Bere, 2013).

WhatsApp for learning has technical obstacles such as being time-consuming, causing eyestrain and taking up memory. However, these can be overcome by limiting learning sessions. Despite this, WhatsApp is effective for training critical thinking skills through analyzing, evaluating, applying, generating and expressing ideas, which are measured by clarity, accuracy, relevance, depth, and logic indicators. According to (Kustijono & Zuhri, 2018b), WhatsApp can be used as a tool to enhance students’ critical thinking skills. In addition, WhatsApp facilitates the process of sharing multimedia annotations and plays a crucial role in transferring annotations, as noted by (Cetinkaya & Sutcu, 2019). WhatsApp serves various purposes for students, including communication, social interaction, dialogue creation, and sharing, in addition to functioning as a learning platform. While WhatsApp offers technical, educational, and academic advantages, it can also lead to challenges such as irrelevant messages and language incompatibility between teachers and students, as pointed out by (Mayangsari & Apriant, 2017). According to Allen et al., (2016), many parents use WhatsApp as a primary source of internet because it allows them to receive text, pictures, and videos at no cost. WhatsApp is commonly used for forming social relationships. The application presents valuable opportunities for promoting learner autonomy and has the potential to revolutionize teaching and learning in higher education (Bax, 2003). WhatsApp is the most popular and widely used application across mobile devices, which makes it a preferred choice.

WhatsApp has become an integral part of our lives and it is now difficult to imagine life without it (Cui & Wang, 2008). Mobile applications have become so advanced that they now offer almost the same features and functions as personal computers. Prensky (2003) defined mobile phones as not just communication devices, but also as tools that foster new ways of interaction between teachers and students, making them particularly useful for education. Beterov et al. (1982) argue that, like all communication and computing devices, mobile phones can be used for learning. Agnes & Agnes (2005) identify mobile learning as an essential, spontaneous, personalized and inclusive approach to digital ethics. Although some may see using WhatsApp as an extension of e-learning, it provides more flexibility to learners in terms of time and place of access to learning material and communication, which can alter the relationship between the learner and the learning process.

Mobile applications offer several features, such as voice, SMS communication, browsing, downloading, sharing, and a variety of other applications. With the introduction of smartphones, the popularity of mobile applications has increased, and they are increasingly prevalent among mobile users. One such popular application among smartphone users is WhatsApp, which is a proprietary platform and instant messaging subscription service for smartphones. Besides text messaging, users can send educational images, videos, and audio media messages, as well as share integrated educational materials (Ojedeji, n.d.). WhatsApp messenger offers collaborative features such as multimedia, group chat, unlimited
messaging, cross-platform engagements, offline messaging, no charges involved, pins, and usernames. The utilization of WhatsApp has become very popular, and it can have a great impact on students' learning and education (Yeboah & Ewur, 2014). Motiwalla, (2007) found that the majority of university students benefit from sharing educational information through WhatsApp. Similarly, Bere & Rambe (2013) examined the utilization of WhatsApp in a South African university and found that students claimed it was an easier way to communicate with their teachers and peers. Aicha, (2014) argues that WhatsApp is more effective than face-to-face learning in the classroom. Overall, WhatsApp has become a useful platform that enhances accessibility, encourages cooperation, and intensifies motivation to take an active part in the academic process (Rambe & Chipunza, 2013). Moreover, WhatsApp is a useful application that operates on nearly all current types of smartphones devices, helps in relatively synchronous group work, and instant knowledge. It is a suitable and easy-to-learn media.

METHOD

The researcher searched the ERIC, ResearchGate, Google Scholar, and Scopus electronic databases for relevant studies. The following keyword descriptors were used in combination: (“whatsapp*” or “whatsapp learning*” or “whatsapp education” or “whatsapp teaching” or “whatsapp usage” or “whatsapp group or individual” or “whatsapp communication” or “technology in whatsapp” or “whatsapp learning 21st century” or “whatsapp benefit”, or “digital education in whatsapp”, or “education in 21st century”, or “21st century edu in digital method”. All the above terms were used in searches of whole texts of publications.
**Inclusion criteria**
The paper reports on an empirical study
The paper involves the utilization of Whatsapp group in digital education
The paper includes, explanation and report upon the utilization of Whatsapp group in digital education

**Exclusion criteria**
Type of study: editorials, book reviews, book chapters, secondary data, and data mining
General discussion of ideas/topics on learning Whatsapp education, no utilization occurred

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Full text selection and review
N=64

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50 Articles excluded for not meeting the inclusion criteria
Type of study: editorials, book reviews, book chapters, secondary data, and data mining(N=29)
General discussion of ideas/topics on learning technologies, no evaluation occurred(N=21)

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Articles included after full text review
N=14

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**SUMMARY OF THE SELECTED PAPERS**
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<th>Author and year</th>
<th>Title</th>
<th>Participants</th>
<th>Method of study</th>
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<tr>
<td>Diganta Baishya, Saurabh</td>
<td>Whatsapp groups in academic context: Exploring the academic uses of</td>
<td>Quantitative- Include teachers 123 + without teachers 1404 = 1527</td>
<td>Mixed method (Quantitative-content analysis, Qualitative-interview)</td>
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<td>whatsapp groups among the students</td>
<td>Qualitative- 8 (3M + 5F)</td>
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<td>Usage of whatsapp and interpersonal communication skills among private</td>
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<td>Amira Harmizi 2020</td>
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<td>Adaptiveness of the new whatsapp settings for teaching, learning and</td>
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<td>Nwobike, Aruchi 2019</td>
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<td>Levent, Selim Soner 2019</td>
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<td>multimedia annotations sent via whatsapp</td>
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<tr>
<td>Oriji, Abraham Anikpo, Fanny</td>
<td>Social media in teaching-learning process: Investigation of the use</td>
<td>1603 UG students, 128 lecturers.</td>
<td>Descriptive survey</td>
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<td>2019</td>
<td>of whatsapp in teaching and learning in university of port harcourt</td>
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<td>Robert Guerrero, Llinás &amp;</td>
<td>Online teacher-students interactions using WhatsApp in a law course</td>
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<td>Montero 2019</td>
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<td>R Kustijono and F Zuhri 2018</td>
<td>The use of facebook and whatsapp application in learning process of</td>
<td>40 students</td>
<td>Descriptive qualitative</td>
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<td>students’ critical thinking skills</td>
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<td>Cetinkaya, L. 2017</td>
<td>The impact of whatsapp use on success in education process</td>
<td>10th grade 15–16 age</td>
<td>Mixed method (Quantitative-Quasi-experimental; Qualitative -Open-ended question forms)</td>
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<td>Quantitative Experimental group 15M, 151F;</td>
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<td>Qualitative 30</td>
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<tr>
<td>Rully Agung Yudhiantara, Aan</td>
<td>Whatsapp goes to campus: Promoting mobile assisted language learning</td>
<td>42 participants (20 m, 22 f)</td>
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<td>Hasanah and Uus Ruswandi 2017</td>
<td>(mall) in islamic higher education</td>
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<td>Author and year</td>
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<td>Sonia Gon Alka Rawekar 2017</td>
<td>Effectivity of e-learning through whatsapp as a teaching learning tool</td>
<td>40 students</td>
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<td>Chokri Barhoumi 2015</td>
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<td>Thirty four students-control group</td>
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<td>Fifteen students-control group</td>
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<tr>
<td>Dan Bouhnik and Mor Deshen 2014</td>
<td>Whatsapp goes to school: mobile instant messaging between teachers and students</td>
<td>12 participants</td>
<td>Qualitative</td>
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<tr>
<td>Yeboah Solomon Tawiah, Horsu Emmanuel Nondzor, Abdulai Alhaji 2014</td>
<td>Usage of whatsapp and voice calls (phone call): Preference of polytechnic students in Ghana</td>
<td>600</td>
<td>Descriptive survey</td>
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**DISCUSSION**

**How does WhatsApp support student learning?**

WhatsApp groups facilitate communication, encourage socializing, and foster sharing among students (Seufert et al., 2016; Vannieuwenborg et al., 2012). WhatsApp also supports vocabulary learning (Agir, 2014). WhatsApp is a convenient tool for teaching and learning, accessible anytime and anywhere (Yücel, 2013). Quick and user-friendly WhatsApp learning for both teachers and students (Tak, Chan et al., 2020). WhatsApp learning is also followed from elementary school up to higher education study (Gallagher & Savage, 2020). According to Seufert et al., (2016), WhatsApp is also utilized for examinations through Google form and KoBo toolbox and are able to correct wrong answers immediately. At the same time, students can send answers through WhatsApp. WhatsApp also assists learning offline as, once downloaded, an image or file can be viewed multiple times, without being online. WhatsApp can have both positive and negative effects on academic performance, but the positive effects seem to outweigh the negative ones. It provides an easy way for students and teachers to share academic materials such as pictures, videos, and group discussions online. Bioccati, (2010); Yudhiantara et al., (2018) the use of WhatsApp can have both positive and negative effects on academic performance. However, based on the literature reviewed, the positive effects seem to outweigh the limitations. WhatsApp allows students and teachers to share pictures, academic videos, and group interactions which can encourage a more social environment, create dialogue, and encourage sharing among students. Additionally, according to
Cetinkaya & Sutcu, (2019), WhatsApp also supports vocabulary learning. WhatsApp learning is quick and convenient for both students and teachers, allowing for anytime, anywhere learning (Amadi et al., 2019). It is also a useful tool for teaching and learning activities, as it enables students to learn and teachers to share vital academic materials online. WhatsApp is even used for examinations through Google Form and KoBo toolbox, which can correct wrong answers immediately (Robles et al., 2019). Overall, WhatsApp can be a valuable tool for enhancing academic performance. At the same time, students can send answers through WhatsApp. Moreover, Barhoumi, (2020) said that WhatsApp also assists learning offline as, once downloaded, an image or file can be viewed multiple times, without being online. WhatsApp has both positive and negative effects on academic performance. Despite its limitations, the app allows for easy sharing of pictures, videos, academic materials, and group interactions between students and teachers (Yeboah & Ewur, 2014). Social media is also used in education (Cetinkaya & Sutcu, 2019), with the belief that it enhances learning due to students’ increased internet access at home (Alabdulkareem, 2015).

The application encouraged file sharing among students. The teacher shared assignments in PDFs, which students then shared with friends. Other files exchanged were images and videos for English Language Learner activities. It facilitated interaction, collaboration, and better English learning. WhatsApp was used for file sharing and practising English outside the classroom (Yudhiantara et al., 2018). WhatsApp improves academic collaboration and motivates students to be more active in assignments their assignments (Rambe & Chipunza, 2013). The collaborative features of WhatsApp, such as multimedia, group chat, unlimited messaging, cross-platform engagement, and free service, enable its benefits (Baishya & Maheshwari, 2020; Bansal & Joshi, 2014). According to Baishya & Maheshwari, (2020) Students prefer using WhatsApp groups in schools and colleges to share academic information. They discuss classes, study materials, exams, marks distribution, and clear doubts easily. Regularly attending students share information and ask questions with their classmates.

EDUCATIONAL BENEFITS OF THE WHATSAPP PLATFORM

Students at universities and major institutions of higher education use WhatsApp for communication, including text, voice, and video messaging, instead of traditional SMS (Aicha, 2014). WhatsApp instant messaging is used in higher education for both audio-video and instant messaging (Smith & Borreson Caruso, 2010). Most higher-learning institutions are open to using these features for educational purposes (Ahn et al., 2007). Motiwalla, (2007) suggests that utilizing the WhatsApp application for educational purposes is highly popular among students and offers significant benefits. Additionally, Litchfield et al., (2007) have found that students in education have a positive attitude towards using WhatsApp application in educational fields. They recommend investigating the utilization of WhatsApp applications in the current climate and exploring how technology can be best utilized in education. The overall educational benefit of this WhatsApp utilization architecture was to value-add to the anytime and everywhere flexibility of e-learning. WhatsApp application is helpful for students from both online and on peer group environments (Motiwalla, 2007). Students can use WhatsApp to share course content and enhance second language vocabulary (Rambe & Chipunza, 2013: Cui & Wang, 2008).
RECOMMENDATIONS

The authors recommend that every educational institution should conduct a campaign within the academic environment to encourage students to use social networks, especially WhatsApp groups, for improving their academic performance. WhatsApp groups can also be helpful for students to learn how to navigate the higher education system, including registering for courses and obtaining advice (Venturino & Hsu, 2022). The authors suggest that establishing a WhatsApp group for students can be highly beneficial. It allows teachers to get to know their students more deeply, learn about their interests, strengths, weaknesses and issues they may be facing. The group also fosters a positive atmosphere in the class, where students can share funny and personal things, and help each other resolve social conflicts. By encouraging the group to participate in the conversation, students feel more connected to the class and are more likely to approach their teachers with questions and concerns. WhatsApp also enables easy and quick transfer of study materials, ensuring that everyone is up-to-date with course content. Overall, the use of WhatsApp can improve the interpersonal relationship between teachers and students, providing an effective way to enhance learning outcomes and create a positive classroom environment (Biolcati, 2010). According to Gluga et al., (2013) mobile devices are often discouraged in classrooms, including schools. However, as mobile usage increases and institutions recognize the potential for learning opportunities, many are integrating tablets into their curricula. The use of WhatsApp Messenger can help students enhance their learning process and stay on track by allowing them to exchange simple text messages.

CONCLUSION

Textbooks now include URLs and QR codes, and WhatsApp groups are used for courses and exams. WhatsApp aids learning and communication fluency, but students and lecturers haven’t been trained on its use (Abraham & Fanny, 2019). WhatsApp is a popular and effective tool for education. It supports teaching and learning among teachers and students in a formal and informal way. It's an interactive platform for conversation that has the potential to improve academic quality. Shabani et al., (2010) suggest that WhatsApp reflects the concept of Zone of Proximal Development, where learners and teachers co-create knowledge. Advancements in technology are changing educational environments and the tools used by students (Selwyn, 2010; Tondeur et al., 2016).

Declarations

Competing interests: The authors declare no competing interests.

References


