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# **Impact of WhatsApp Groups on Teaching and Learning in Higher Education: A Review**

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# Impact of WhatsApp Groups on Teaching and Learning in Higher Education: A Review

## Abstract

*The impact of WhatsApp groups on teaching and learning in higher education institutions is growing, as both instructors and students see its potential to improve the learning experience. The study adopted a systematic literature review following the PRISMA guidelines and 26 articles were analyzed. The results showed a rise in the usage of WhatsApp during COVID-19 and an expansion of the usage in higher education in teaching and learning. Furthermore, WhatsApp groups have benefited students and lecturers in teaching and learning in different academic fields and a positive impact was seen. However, some challenges were realized due to the introduction of WhatsApp groups in teaching and learning. This study has brought a new voice to the body of literature on digital technologies.*

**Keywords:** WhatsApp Group, Teaching and Learning, Higher Education, Social Media, ICT, Online Technology

# **1 Introduction and Background**

Social network applications have played an important role in teaching and learning for a long time transforming the higher education landscape and changing established approaches to teaching and learning. In this digital age, one noticeable phenomenon is the growing usage of messaging networks such as WhatsApp as educational tools within higher education institutions. The platform allows people with shared interests to collaborate irrespective of geographical distances and times when they form groups (Koole, 2009; Rambe & Bere, 2013). WhatsApp, which began as a personal messaging service, has rapidly found its way into the academic world, providing a versatile platform for communication, collaboration, and participation. The impact of WhatsApp groups on teaching and learning in higher education institutions is becoming increasingly important, as both educators and students see its potential to improve the learning experience. WhatsApp was chosen as the social media platform for this study because it is a popular platform in most African universities. Furthermore, the user-friendliness (Sari & Putri, 2019) and ease of use (Widodo, 2019) of WhatsApp are also a positive factor for learners who lack technical knowledge.

Higher education institutions are increasingly resorting to WhatsApp groups to facilitate communication, collaboration, and information exchange among students and educators in an era of quickly changing digital technology (Udenze & Oshionebo, 2020; Nyamupangedengu et al., 2023). While the impact of WhatsApp groups keeps growing in educational spaces, their recognition remains on the periphery of educational policy documents, which do not list their integral part in teaching and learning within higher education. This paper reviews the literature to assess the impact of WhatsApp groups on teaching and learning in higher education, given challenges such as high data costs and institution restrictions (Wang & Chen, 2009; Snoussi, 2019) associated with the Learner Management System (LMS). In some countries, such as Bulgaria and India, institutions integrate applications within their LMSs (Mahapatra et al., 2016; Chikurteva et al., 2020). While technological integration has the potential to improve teaching and learning, it also raises serious concerns about the overall influence on pedagogical practices, student engagement, privacy and security, exclusion, and academic achievement in higher education. To get well-

informed about integration benefits, it is important to assess the impact that these applications, such as WhatsApp groups, bring to teaching and learning in higher education, considering both the benefits and drawbacks. The key research question for the study is:

*What is the impact of WhatsApp groups on teaching and learning in higher education?*

The remainder of the paper is structured as follows: Section 2 discusses the literature review on WhatsApp groups in teaching and learning, Section 3 describes the research methodology, Section 4 presents the findings, Section 5 discusses the findings, Section 6 concludes the paper and gives the contributions of the study, and Section 7 provides a recommendation.

## **2 Literature Review**

Research arguments are contextualised within other related studies by identifying gaps and acknowledging opposing and supporting viewpoints. We carried out a systematic literature review to achieve comprehensiveness (Okoli & Schabram, 2010) and position our understanding of the phenomenon of interest within prior studies. We discuss the literature review under the following sub-themes: understanding WhatsApp groups, digital tools in education, WhatsApp groups in education, and supporting the argument with a theoretical perspective. We used structural coherence (Locke & Golden-Biddle, 1997) to identify how the literature on WhatsApp groups is linked.

### **2.1 Digital Tools in Education**

According to (Bond et al., 2018), the prevalence of digital tools in education has witnessed significant growth in recent years, a trend projected to persist into the future, even impacting the workplace, as suggested by (Colbert et al., 2016). These digital tools have brought about a transformative shift in education by furnishing educators and learners with innovative avenues for content engagement, peer collaboration, and personalised learning experiences. Researchers (Jere et al., 2019; Rahaded et al., 2020) highlight that digital tools streamline communication and cooperation between students and teachers. For instance, platforms such as WhatsApp enable students to collaborate on projects and gain knowledge from one another, irrespective of geographical boundaries (Koole, 2009; Duncheon & Tierney, 2013; Mao et al., 2017). Nonetheless, the integration of digital tools into the educational landscape raises pertinent challenges on equity, privacy, and the imperative for comprehensive teacher training. In light of the evolving educational milieu, it becomes imperative for educators and institutions to judiciously harness digital tools to optimise their advantages while concurrently addressing the attendant concerns, thereby ensuring that technology acts as a catalyst, rather than an impediment, in enriching educational experiences. The substantial engagement facilitated by digital tools on platforms like WhatsApp enhances personalised learning prospects, given the extensive participation of peers in collaborative endeavours.

## **2.2 WhatsApp Groups in Education**

A WhatsApp group is a chat space within WhatsApp that enables multiple users to communicate, share information, and collaborate. A WhatsApp group is created by a person who takes on the role of group administrator by default. Depending on the group's purpose and the admin's preferences for joining participants, WhatsApp groups can have a few to hundreds of members. New members can join a group without an invitation from the admin by clicking invite links generated by group admins, but, of course, this has the potential to attract people with no shared interests, although it is useful for large groups or public communities.

One of the most common uses of WhatsApp groups is sharing classroom communication, such as assignment submission reminders, important class updates, and broadcasting class achievements and important dates. According to (Rahmadi, 2020) study, students acknowledge their potential passively through WhatsApp groups. Further, WhatsApp groups have been found to increase student motivation (Susilawati & Supriyatno, 2020), extend the instructional time (Dzvapatsva, Chinhamo, Yan & Matobobo, 2024), and contribute to active learning and student engagement (Dahdal, 2020; Nugroho, 2022). In addition, WhatsApp groups are one of the fastest ways to share resources among students in class and provide immediate feedback (Spencer & Hiltz, 2003). Using WhatsApp groups, teachers and students can share educational materials such as PDFs, links to online articles, videos, and more. However, it should be noted that WhatsApp groups have some challenges that educators need to deal with to get the best out of these platforms.

Given the chaotic nature of WhatsApp groups, there is a need for proper control to ensure the privacy of participants. It is crucial to consider alternatives for students without WhatsApp access or who prefer not to use it; otherwise, the platform becomes a stumbling block to learning. Dualising communication, though it is time-consuming potentially helps to deal with the aforementioned challenge. WhatsApp's capabilities in voice and text assist immensely in catering to students with differential physical challenges, which, in essence, helps students understand the information quickly. For WhatsApp groups to be used effectively in education, educators and students should be aware of both their advantages and limitations. We conclude that the discussed literature suffers from progressive incoherence. We then use

connectivism as the underpinning theory to position our argument within existing frames.

### **2.3 Theoretical Framework - Connectivism**

This study examines how information is disseminated within WhatsApp groups using the connectivism learning theory by George Siemens. As part of the theory adopted for this study, the following concepts are highlighted: diversity of opinions, networks, chaos, openness, and self-organizing (Siemens, 2005; Goldie, 2016). The concept of connectivism has been proposed as a learning theory for digital natives who rely on networks, with active nodes considered to be the most reliable connections within WhatsApp groups (Dzvapatsva, 2020). A WhatsApp application offers a fast, easy, and cheap way to communicate, especially if you're in a poor area (van den Berg & Mudau, 2022). The multiplicity of nodes (Downes, 2007) facilitates communication and information sharing among the group members. As soon as a student identifies an important node in a WhatsApp group, they start self-organizing. While connectivism has been criticized for its lackadaisical assumption that identification of key nodes is easy (Dunaway, 2011), we believe students themselves can quickly identify sources of reliable information within the WhatsApp group itself. In higher education, connectivism can inform teaching and learning methods, instructional design, and curriculum development.

Connectivism was considered appropriate in this study because it offers a theoretical framework that is consistent with the features of WhatsApp groups as technologically mediated and networked learning environments. Connectivism's influence on learning theories and instructional methods, along with its applicability in the current digital era, make it a suitable theoretical framework for this research. In light of the digital age, the theory's emphasis on the value of networks and connections in learning is extremely pertinent. Connectivism's application as a theoretical framework within the context of a methodical literature review allows for a thorough analysis of WhatsApp groups' effects on teaching and learning in higher education. In this inquiry, the researchers searched the examined papers for connectivist characteristics related to the subject matter. The results were categorized into themes.



### 3 Methodology

The research adopted a systematic literature review to assess the impact of WhatsApp groups on teaching and learning at higher education institutions. A systematic literature review was adopted because it allows the researchers to survey and synthesize existing research on the subject comprehensively. The purpose of the systematic literature review approach was to offer evidence-based insights into the usefulness of WhatsApp groups as a teaching and learning aid. Systematic literature review is critical in the context of higher education, where evidence-based approaches must inform educational strategies. By using this strategy, the researchers are assured of including a wide range of viewpoints, conclusions, and study techniques about the effects of WhatsApp groups in educational settings. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standard was adopted as a guide for locating previously published works (Moher et al., 2009). The researchers followed the PRISMA guidelines to conduct the research due to its rigour, comprehensiveness, and reproducibility (Okoli & Schabram, 2010). The following inclusion criteria were used:

- WhatsApp groups
- Teaching and learning
- Higher education

On the other hand, articles were excluded due to the following reasons:

- Not focusing on WhatsApp groups
- Not focusing on teaching and learning
- Not focusing on higher education
- Not written in English
- Repeating articles
- Full articles are not available

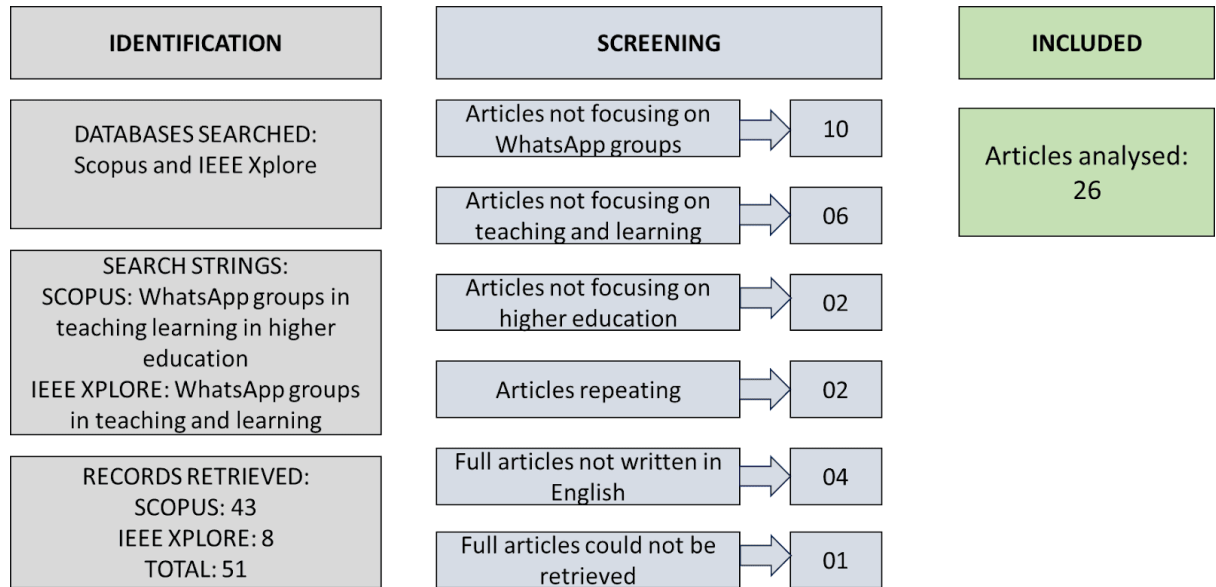
The researchers conducted a literature search from two databases namely Scopus and IEEE Xplore, as shown in Figure 1. The researchers used the following search strings in the databases:

*Scopus: WhatsApp groups in teaching and learning in higher education*

*IEEE Xplore: WhatsApp groups in teaching and learning*

The researchers used different search strings because the search string used in the Scopus database retrieved only 4 articles in the IEEE Xplore. In trying to expand the research, the researchers decided to open up the search string, hoping to retrieve more articles. The study retrieved a total of 51 articles from both databases. The articles

were screened using the inclusion and exclusion criteria for the study, and 25 articles were excluded. The researchers analyzed 26 articles that met the inclusion and exclusion criteria. The whole process of searching is illustrated in Figure 1.



**Figure 1. Diagrammatic representation of the methodology**

## 4 Results

The results are presented in the form of themes. Table 1 shows the documents that were analyzed by year of publication.

Year	Frequency	Frequency (%)
2023	2	7,69%
2022	4	15,38%
2021	5	19,23%
2020	8	30,77%
2019	1	3,85%
2018	3	11,54%
2017	1	3,85%
2016	2	7,69%
Total	26	100%

**Table 1. Documents by Year**

Table 1 shows that the majority of the papers (65.38%) dealing with WhatsApp groups on teaching and learning with an emphasis on higher education were published

between 2020 and 2022. Only 26.93% of the articles were published before 2020. It can be seen from the table that the discussion about WhatsApp groups in teaching and learning within higher education was sparked more in 2020 when there was a sharp increase. This period coincided with the COVID-19 pandemic.

The results from the analyzed articles were grouped into themes, namely, adaptability and lifelong learning, networked learning and social learning, technology-mediated learning, benefits of WhatsApp groups in teaching and learning, and challenges of WhatsApp groups in teaching and learning. The results are discussed under these themes.

#### **4.1 Adaptability and Lifelong Learning**

Literature shows that WhatsApp groups were used before the introduction of COVID-19 for teaching and learning. However, articles analyzed show that the use of WhatsApp groups has been expanded since the introduction of COVID-19. Before COVID-19, WhatsApp groups were largely utilized for administrative or communication purposes, and they were mostly used by students without the assistance of lecturers (Yu & Motlhabane, 2022). During COVID-19, WhatsApp groups were used to support students when physical classes were suspended in a way to curb the spread of the virus. With the coming of COVID-19, WhatsApp groups have been used to support and supplement academic and professional activities at universities since the outbreak of COVID-19 (van den Berg & Mudau, 2022; le Roux & Parry, 2022). During the era of COVID-19, lecturers shared lecture recordings in various formats (such as audio and videos) in WhatsApp groups for students to access content at any time and from any location, lowering their anxiety caused by feeling alone and left behind (Tunjera & Chigona, 2022).

WhatsApp groups have provided students with a platform to acquire knowledge, actively talk and learn, score higher, and retain more than didactic lectures (Klein et al., 2018). Outside of school hours, the educational intervention of WhatsApp for the course has been seen to improve students' knowledge of the subject (So, 2016). Students saw the potential of the WhatsApp groups for ubiquitous learning and had a positive attitude about this app as a teaching and learning platform (Rahmadi, 2020). Using WhatsApp groups as a handy teaching tool has been shown in studies to boost

academic performance (Alsharif et al., 2020). This made WhatsApp groups the most popular online learning medium throughout the COVID-19 pandemic because they were the easiest to use and access (Pramana et al., 2021).

#### **4.2 Networked Learning and Social Learning**

According to the articles reviewed, WhatsApp groups were used to support students from different disciplines, such as health sciences, pathology, pre-service teachers, law, physics, and ICT as they were learning in their respective groups (Jannat et al., 2022; Tunjera & Chigona, 2022; Yadav et al., 2021; Alsharif et al., 2020; Grover et al., 2020; Klein et al., 2018; Basitere & Ivala, 2017). WhatsApp groups were used to facilitate teaching and learning at the undergraduate and postgraduate levels (Lee et al., 2023; van den Berg & Mudau, 2022; Al-Omary et al., 2016).

Through WhatsApp groups, students were able to engage with each other at their leisure and seek advice from their mentors without hesitation or opposition (Klein et al., 2018). WhatsApp groups assisted lecturers in creating a welcoming environment that assists students outside of the classroom in completing assignments and studying course content (Al-Omary et al., 2016). As a result, WhatsApp groups boost communication in teaching and learning, improve student-to-lecturer contact, student-to-student interaction, student-to-lecturer closeness, and student-to-student intimacy (Robles et al., 2019; Ujakpa et al., 2018). Students exposed to WhatsApp groups were quite satisfied with the utilization of the WhatsApp chat group (Robles et al., 2019). Learning through WhatsApp groups improved student interest in courses as the students received resources in various formats that could cater to different learning styles (Ujakpa et al., 2018). Studies reported positive outcomes in the use of WhatsApp groups to support teaching and learning in courses such as law and ICT (So, 2016). Furthermore, there was a favourable attitude toward the use of WhatsApp groups for project learning in higher education and positive effects such as boosting competency and promoting collaborative learning (Berewot & Fibra, 2020).

#### **4.3 Technology-Mediated Learning**

WhatsApp groups were the most used online learning platforms by lecturers at universities during COVID-19 compared to online platforms such as Microsoft Teams, Zoom, and Google Class (Mursyidin et al., 2021; Figueras-Maz et al., 2021).

Lecturers and students preferred WhatsApp groups because of immediate, speedy, simple, and low-cost communication and interaction, resulting in a sense of belonging for most of the students (van den Berg & Mudau, 2022). Interestingly, students preferred the use of WhatsApp groups in education even before COVID-19 for generating better interaction among students and contributing to the collective building of knowledge (Martins et al., 2018). While these groups are predominantly associated with chaos, they are self-organising with students' ability to identify those who are always providing credible information (Goldie, 2016). Furthermore, WhatsApp groups are an effective communication medium in higher education for students and instructors to maintain communities of practice (Nuuyoma et al., 2020).

#### **4.4 Benefits of WhatsApp Group in Teaching and Learning**

Lecturers and students appreciate the benefits that come with WhatsApp groups in teaching and learning. WhatsApp groups enabled the exchange of a wider range of resources (e.g., texts, photographs, videos, and voice notes) to better fit the varied learning styles of students (Ramkissoon et al., 2020). Besides sharing resources, students performed academic-related activities on WhatsApp, such as group discussions, group studies, and informing educational agendas (Jannat et al., 2022). WhatsApp groups enable the facilitation of hybrid learning and provide a non-restrictive environment by facilitating meaningful interactions with instructors anywhere and at any time (Ramkissoon et al., 2020). The majority of students preferred WhatsApp because it allowed them to access content from anywhere and at any time (Mursyidin et al., 2021). As a result, WhatsApp groups enabled learning to continue even after class with or without lecturers, thereby extending the bounds of a classroom (Figueras-Maz et al., 2021). Moreover, WhatsApp is preferred because of its capabilities for interactivity, usability, respect for privacy, collaboration, and rapidity of feedback (Ramkissoon et al., 2020; Lee et al., 2023). With WhatsApp groups, students in teams benefited a lot, as they could collaborate easily. Teams could make use of group chats, and emojis, read receipts, and quote messages to increase collaboration (Lee et al., 2023). Students working in teams in WhatsApp groups were seen achieving their goals as they did their best to accomplish their tasks (Kurni & Saritha, 2021). Students were seen to solve problems faster when working in WhatsApp groups compared to when they worked in other platforms such as forums and learning management systems (Figueras-Maz et al., 2021). Learning through

WhatsApp groups has a favourable learning effect on students, and the durability of this effect was seen to be higher when the teaching material is delivered in short videos compared to virtual courses hosted through platforms like Skyroom (Jannat et al., 2022). WhatsApp groups also support students in developing countries characterized by challenges such as network connectivity issues, a lack of funds to buy data, and a lack of access to infrastructure (Tunjera & Chigona, 2022). WhatsApp groups brought inclusivity as most students were able to access WhatsApp since it is light on data (Tunjera & Chigona, 2022). In summary, WhatsApp groups were preferred over any other online technology in terms of their ubiquity of usage, efficiency in collaboration, accessibility, sense of presence, and effectiveness as communication tools (Lee et al., 2023; Klein et al., 2018).

#### **4.5 Challenges of WhatsApp Groups in Teaching and Learning**

Besides the benefits that come with a WhatsApp group, some challenges were encountered that affected teaching and learning. Since WhatsApp groups are mainly for socializing, students can be distracted when they do non-academic activities, hindering them from achieving their academic goals (Yu & Motlhabane, 2022). Furthermore, some messages passed in WhatsApp groups may have disrespectful tones; friends may send too many messages in the group that may distract students from academic activities; and also, irrelevant messages can be sent within the group that could divert the attention of students (Yu & Motlhabane, 2022; van den Berg & Mudau, 2022; Alsharif et al., 2020). It was discovered that WhatsApp groups require students who are ready to learn actively, collaboratively, and independently, as there might not be someone monitoring students' engagements (Rahmadi, 2020). Therefore, there is a need to educate students about the techniques that can be used to offset its negative impacts on human behaviour, such as disruptions, addiction, and a lack of responses (Nuuyoma et al., 2020).

## **5 Discussion**

Our study aimed to answer the following research question:

*What is the impact of WhatsApp groups on teaching and learning in higher education?*

Significant data from our findings progressively highlighted the positive impact of WhatsApp groups on learning in higher education, which, in essence, mirrored our literature. The ability of WhatsApp groups for teaching purposes is not explicitly reflected in our data. Although lecturers or facilitators use it for sharing lecture material, the teaching process involves students actively engaging with content, taking part in assessments, and providing feedback or remediation to the process. According to connectivism, learning happens in networks, and WhatsApp groups provide an excellent example of this since they allow users to share resources, participate in collaborative learning, and add to a group's body of knowledge. The immediacy of feedback (Spencer & Hiltz, 2003), also noted in literature is one of the greatest plus for WhatsApp groups, a thing that most platforms might not provide because they are not used as a student playground. Students are always on their mobile phones, and any message that comes through, they are instinctively forced to look at it.

Connectivism recognizes how technology shapes learning experiences. WhatsApp's technology-mediated features support the idea by highlighting how people obtain and share information via digital technologies contributing to social presence. Since WhatsApp provides video and voice, the platform has a high social presence to the extent that students feel like they are in a face-to-face class. Voice and text are a great plus for the medium as they complement each other when used to explain concepts in WhatsApp groups.

Furthermore, connectivism emphasizes the need for learners to adapt to evolving information environments. WhatsApp groups facilitate adaptability by providing a responsive and adaptable learning environment that is consistent with the theory's emphasis on lifelong learning.

WhatsApp groups are of great importance when it comes to content sharing and issuing important key dates for group members. Since the platform can be used for group tasks, completion is easier as communication is instantly received on both ends, and participants can respond to a particular message by tagging it. The more they text and send voice notes, the more they learn to appreciate each other resulting in improved relations. The findings point to positive achievements for students participating in WhatsApp groups owing to improved motivation. This has to be taken

with caution as there could be many other factors contributing, such as the quality of the content.

Similar to our theoretical framework, WhatsApp groups can also be viewed as chaotic. These groups can be very useful for teaching and learning, but there is still a need to control the chaos, which may negatively affect learning. This has been highlighted in our literature and appeared in our findings. Students on WhatsApp groups can identify important nodes primarily due to their face-to-face interaction experience, but this did not come out explicitly in our study. Perhaps this is because the reviewed articles did not use connectivism theory, which we believe would have resulted in similar results. It is crucial to note that WhatsApp groups are beneficial in teaching and learning if associated challenges are dealt with carefully. Our methodology was appropriate for getting conclusive data on the impact of WhatsApp groups on teaching and learning at a very broad level allowing us to get a conclusive voice on their impact.

However, the outcomes of learning, such as skill and competence, are not well revealed in the study.

## **6 Conclusions and Contributions**

The objective of the study was to understand the impact of WhatsApp groups on teaching and learning in higher education. Despite the brevity of the progressive intertextual field developed in the reviewed literature for this manuscript, it exhibits rhetorical strategies that call for the construction of both cumulative progress and consensus regarding WhatsApp groups' effects on teaching and learning in higher education. The methodology applied allowed this study to get a broader perspective on the impact of WhatsApp groups on teaching and learning. The findings suggest that WhatsApp groups can contribute positively to teaching and learning in higher education.

According to (Locke & Golden-Biddle, 1997), reinterpreting existing work to show underlying consensus is the third synthesized coherence practice crucial for the contribution of a study that this research has done. A new voice has been added to the body of literature on digital technologies through this study. We believe that



integrating WhatsApp technology into higher education policy documents will be easier with more voices in WhatsApp groups.

Due to the study's cross-sectional nature, the results need to be taken with caution.

## 7 Recommendation

The study recommends increased use of WhatsApp groups for teaching and learning in higher education. It could be more beneficial if WhatsApp groups were integrated into institutions' Learner Management Systems.

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