

Challenges of Using Social Media as a Teaching Tool in Secondary Schools

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Abstract: The COVID-19 pandemic resulted in a significant shift towards the use of social media platforms to support teaching with educators being responsible for integrating social media into their pedagogical practices. Yet its use has many challenges. This research aimed to describe the challenges secondary school teachers shared about using social media as a teaching tool. This descriptive multiple case study followed an interpretive, inductive, and qualitative approach. Four secondary schools were selected as cases and teachers who used social media as a teaching tool were interviewed. Multiple challenges are described that impact teachers and students. Many are due to the features of social media, and some are due to school infrastructure and policies. Practically this research can help teachers have a better understanding of these challenges before using social media for their own teaching. Policies, curricula, applications, and pedagogies can also be adapted and changed based on the finding of this research.

Keywords: Social media, Teaching tool, Pedagogical practices, Teachers, Technology challenges, WhatsApp.

1. Introduction

Social media is an online network that allows users to generate and communicate their content and participate in social interactions (Giumetti and Kowalski, 2022). WhatsApp, Telegram, Facebook, and Instagram are some examples of social media applications. At the start of the COVID-19 pandemic, governments in many countries, including South Africa, closed schools (Spaull, 2020). Because of this, teachers had to quickly pivot and use online technologies to teach their students and students were encouraged to use these same online technologies to learn (Hatip, 2020). With the resultant increase in the use of social media for teaching, teachers were required to successfully integrate the use of social media into their pedagogical practices (Jenaibi and Mansoori, 2021). Yet there are challenges inherent in using social media for teaching, which if better understood can help teachers manage them, hence there have been calls for more research to be conducted (Ekberg and Gao, 2018). Our research study responds to this call for more research with a focus on the South African context to help provide the needed insights into these challenges. In section 2 we present literature related to the research problem. Section 3 discusses the methodological approach used in the study, while Section 4 discusses the findings. Section 5 concludes by discussing the contributions made by the study, the limitations and future research opportunities.

2. Literature review

As Information and Communication Technologies (ICTs) like social media get used more in classrooms, teachers need to understand the platforms to support teaching (Jenaibi and Mansoori, 2021). For example, secondary school teachers in Nigeria have used Facebook, WhatsApp, Twitter, and YouTube as interactive teaching and learning channels for communication and to share information. Their students experienced a positive increase in their overall learning experience (Olowo et al., 2020). WhatsApp has been identified as the simplest and most convenient way to conduct teaching (Mhlanga and Ramoroka, 2021; Olowo et al., 2020). YouTube has been found to be useful for sharing videos between teachers and students (Bicen and Taspolat, 2019). Yet a concern that is expressed by teachers is boundaries between work and leisure getting blurred because of the availability of access to communication and content online (Rosenberg and Asterhan, 2018).

There are also challenges in accessing the relevant required technologies. Reliable internet access, required for social media use, is an issue in many countries (Pokhrel and Chhetri, 2021). Not having access to one's own digital device is also an inhibiting factor (Pokhrel and Chhetri, 2021). The digital divide refers to disparities in ICT access, usage, and outcome (Lythreathis, Singh, and El-Kassar, 2022). School principals in Gauteng have shared concerns that several students lack ICT skills, have no Wi-Fi access, can't afford data, and struggle with network connection issues which limit the use of ICT for teaching (Chisango and Marongwe, 2021). In South Africa, schools are classified into five quintiles from the poorest (Quintile 1) to the least poor (Quintile 5). Unequal ICT

within and across schools leads to knowledge, information, and digital divides (Chisango and Marongwe, 2021). Schools with inadequate ICT could not run online classes during COVID-19 which led to a knowledge divide as schools with ICT access taught online.

The successful integration of social media into the school curriculum has become a key focus area of the South African Department of Education (Chisango and Marongwe, 2021). Besides being competent in their subject's content, teachers need to be comfortable executing pedagogical methods that are relevant in the 21st century (Moodley, 2019). Teachers from disadvantaged schools with limited ICT resources tend to not have the expertise or skills needed to effectively use ICT for teaching (Jenaibi and Mansoori, 2021). These teachers tend to resist using ICT (Jenaibi and Mansoori, 2021). Some educators also believe the use of social media for teaching detracts from a learner's time. Hence educators resist using the platforms to teach (Al-Bahrani, Patel, and Sheridan, 2016). Lack of teacher training is also a major concern. Most schools offer inadequate or no ICT training (Ekberg and Gao, 2018). There are also policy concerns. In South Africa, the school policy by the Department of Basic Education does not advocate for the use of social media in teaching English, but some teachers still use it (Rwodzi, de Jager, and Mpofu, 2020).

In summary, current literature on the challenges of using social media in teaching focuses mainly on higher education. Some studies do explore social media use challenges in secondary schools, but their focus is on developed countries like Sweden (Ekberg and Gao, 2018). A clear knowledge gap on the challenges of using social media as a teaching tool within secondary schools in less developed countries like South Africa is noted (Chugh, Grose, and Macht, 2020). Our study starts to address this important gap in literature by describing the challenges experienced by secondary school teachers in South Africa who use social media to support teaching. Our central research question we ask is "What are the challenges with using social media to support teaching in secondary schools?"

3. Research method

This multiple case study took an interpretive and inductive approach to theory development (Walsham, 2017). The case studies were four public, fee-paying secondary schools (C1 – C4) that used social media as the predominant online tool to assist their teaching. C1 was a Quintile 4 school while the other schools were Quintile 5. These schools were selected as they continued teaching using social media during COVID-19. Consent from the Western Cape Education Department to conduct the study was obtained as well as approval from the authors' university ethics committee. Table 2 lists the case characteristics and secondary data collected. C4 described their school Wi-Fi as usually working, C1 and C2 described theirs as intermittent and C3 as mostly offline as there was no electricity due to vandalism. In C2 teachers had access to training on technology usage while there was no training offered to teachers on technology for teaching in any of the other schools. Semi-structured interviews performed in 2022 were the primary data source. The sample consisted of one to two teachers at each school with social media teaching experience and teaching diverse subjects. Table 1 summarises the respondents, all used WhatsApp other than RP03 who used Telegram. NVivo software was used to organise the interviews and secondary data whilst thematic analysis (Braun and Clarke, 2012) was used to discover emerging categories and themes within the data.

Table 1. Research participants of this study

ID	Grades taught	Subjects taught	Social media years for teaching	Caseld
RP01	Grade 8-10	Natural science and Life sciences	3	C1
RP02	Grade 8 - 9, 11 – 12	Social science	3	C1
RP03	Grade 8-10	Information technology	3	C2
RP04	Grade 8	Afrikaans	3	C2
RP05	Grade 9-12	Business studies	3	C3
RP06	Grade 10-12	Physical Science	5	C4

Table 2. Case descriptions

CaseId	Quintile	Approximate teachers	Approximate students	Secondary documentation
C1	4	28	1000	C1D1 - Code of conduct
C2	5	31	1100	C2D1 - Cell phone policy
C3	5	24	1000	
C4	5	42	900	C4D1 - Social media policy

4. Research findings and discussion

There were several uses for social media in teaching in secondary schools mentioned by the participants. The most prominent use was for sending resources. The other uses included communication, sending homework, and one participant using social media as a translation tool. This section describes the challenges associated with using social media, classified into different categories namely: student challenges, teacher challenges, application challenges and lastly institutional challenges. Finally, we visually present a summary of our findings.

4.1 Student challenges

Students experience challenges when using social media for school. The main challenges identified were the device and associated constraints, safety and privacy concerns, and lack of data.

4.1.1 The Device and Associated Constraints

Literature notes that families with limited resources might only be able to afford a cell phone with low specifications that cannot access WhatsApp (Chisango and Marongwe, 2021). The lack of access to a device and devices with low specifications were mentioned by all participants as major challenges to social media use in teaching. Participant RP03 stated that *“our learners come from impoverished backgrounds. Having a smartphone isn't the first thing on top of the list at home.”* Participant RP05 added: *“some students have phones that are not WhatsApp friendly which we cannot use for teaching.”*

4.1.2 Student Safety and Privacy Concerns

Two participants from C2 mentioned that cyberbullying on social media was a big issue at their school. As RP03 stated: *“Yes. And we have had quite a lot of cases when it comes to cyberbullying, not only via WhatsApp via Instagram, Facebook, you name it”*. Sharing numbers can lead to giving students access to each other and this can increase cyberbullying. Participants mentioned that some students were worried about their privacy, and this led to some learners being hesitant to participate. As RP04 stated *“Initially, there was some hesitancy, by only a few because they did not want to have it, their number, with private Contact Detail shared amongst so many people.”* Literature supports this as learners are concerned about their privacy when joining social media as they have a concern for their information being shared (Chugh, Grose, and Macht, 2020). Participants also highlighted that impoverished students who live in dangerous neighbourhoods were at risk of having their cell phones stolen. Participant RP03 explained that *“learners who walk or use public transport to school, if they have their devices with them, it does make them a target of crime.”* Participant RP02 adds that *“our kids get robbed a lot so if their phones are stolen, they usually don't get a replacement.”* Student safety as a theme linked to the crime of having one's cell phone stolen is not mentioned in the current academic literature.

4.1.3 Lack of Data or Internet Access

All interviewees mentioned that while some students have access to a device, these same students don't have the necessarily data on the device to access and use social media applications like WhatsApp. Participant RP03 emphasised that *“access to data is a major challenge that we have not overcome yet.”* Participant RP01 highlighted that *“many people lost their jobs during COVID-19. These same people are struggling to buy basics like food, so data has become a very low priority.”* This confirms literature that reports that some students and teachers can't afford data and lack internet access at home (Chisango and Marongwe, 2021).

4.1.4 Lack of Participation and Falling Behind

Three participants mentioned that some students lack the skills to use technology to access resources sent on social media. *“So, it depends on where you go because some of them get the new phones and it's not always installed as a default program, and they say, ‘I can't open this’”* (RP04). Alternatively, three participants shared that some learners do not want to use social media. *“Yes, there are quite a few of the learners who are very hesitant, so they basically don't want to be part of it. And you can't force them because at the end of the day, that is their right”* (RP03, C2). These learners fall behind the others in the class that have access. *“That 8 people (learners not participating) they're not benefiting from videos that I sent because I don't have the time to actually show them the videos. So, I send it in the group and that 8 people they are not benefiting while the 32 people are.”* (RP05, C3). Using social media for teaching can affect the performance of students who are reluctant to use the technology, can't access the technology and those who lack the skill to use it (Wyse et al., 2020) which increases the knowledge divide.

4.2 Teacher challenges

Teachers themselves experience challenges when using social media for teaching. The main challenges identified were concerns over their privacy, increased work for teachers, difficulties with co-ordinating groups and the lack of teacher training.

4.2.1 Concerns Over Teacher Privacy

All participants mentioned that learners having access to their personal cell phone numbers is a real concern. The challenge is trying to keep one's work and personal life separate. Participant RP02 said that *“the teacher can exclude students from statuses, but they still see your profile picture. Some students would save this picture as their own WhatsApp status. Obviously, I messaged them about respecting my privacy.”* To try and address privacy concerns, participant RP04 highlights that *“I have another number that I use outside of work. Even my email address. I have a personal email address that is linked to all my other social media.”* The findings confirm the current academic literature in that teachers are concerned for their privacy when using social media for teaching (Chugh, Grose, and Macht, 2020). Not everything in these WhatsApp groups stay private which further exacerbates the privacy concerns teachers have (Chugh and Ruhi, 2017).

4.2.2 Increased Work for Teachers

Similarly, all participants mentioned that using social media increased their workload and increased working outside the normal school hours. Additional activities include conversing with students after school hours and the making and editing of teaching videos. Participant RP02 explained that *“students would message you two o'clock in the morning. There is a rule to not message the teacher after school hours, but they still ignore it. Even though you don't reply, you still get the notification which is a disturbance.”* Furthermore, participant RP03 adds that *“I need to record the videos and after that I need to go and check through the videos if I have made any mistakes or errors. I then need to go back and correct it. So, unlike the classroom environment, where if I made a mistake, I could quickly go back and correct it. With a video however I need to make sure my facts are 100% correct which means it takes much longer.”* Social media is intrusive which makes teachers more accessible to their learners. Students contact their teachers after school hours even though there are school rules that forbids this. Creating teaching videos as extra content for learners are done outside of school hours. These findings confirm the academic literature where the line between work and personal time for teachers gets blurred. This is due to making themselves available to their students on social media (Rosenberg and Asterhan, 2018).

4.2.3 Lack of Teacher Training

Teachers not having adequate training to use social media is identified as a significant issue. Some teachers knew more about the use of technology for teaching than others. These teachers assisted their counterparts by providing guidance on how to incorporate social media use into teaching. Participant RP02 highlights that *“the challenge is older teachers asking us to show them because they do not know how to use WhatsApp in the classroom. Our school did not get training. So, it is a challenge for the older teachers. But we as young teachers try our best to help them.”* Participant RP04 adds that *“I've had to teach many of them how to restrict access to the WhatsApp groups, how to even change the names of groups.”* Some teachers do not feel confident when using social media. These teachers rely on their colleagues' help to make the best use of social media within

their classrooms. Literature confirms that teachers need to be educated on how to use social media. If not, they will be hindered from effectively using social media in the best way possible (Moodley, 2019).

4.2.4 Difficulty Co-Ordinating Groups

Several participants mentioned that it is challenging to co-ordinate social media groups for teaching. It is also difficult to constantly add new or replacement cell phone numbers to the groups. The teacher is then left with the nightmare of managing multiple contacts. Participant RP04 explains co-ordination as *"I would do lessons with the one group. For this group I would also send reminders not to forget homework tasks. For the group coming tomorrow I must remember to send a reminder to not forget to bring a textbook. You must remember all of this."* Participant RP02 adds that *"students always get new numbers. And the challenge for me is I need to resend the previous lessons to the learners every time they ask me: 'can I add you'. That means more admin on my phone. I need to add new numbers and I get so confused. I have so many new numbers. Sometimes it is even a parent's number."* The challenges associated with co-ordinating the lesson activities of different student groups and constantly having to manage the contacts linked to the social media group themselves are not mentioned in the current academic literature.

4.3 Software application challenges

Limitations associated with the social media application itself are limits set for file sizes and the lack of teaching features on social media applications.

4.3.1 File Size Limitations

WhatsApp's file size limit makes it difficult to send large files over WhatsApp. Videos, documents and even voice notes are blocked. Participant RP01 describes that *"the video length allowed by WhatsApp is a limitation. If you want to send a video, it only allows files with a certain number of megabytes. This is not enough for the teaching videos we create. I literally cut the video in increments to send it over WhatsApp."* Participant RP04 agrees and says *"It (WhatsApp) is very limiting because your voice notes can only be a certain length long."* Size file limits is a significant hinderance to teachers who want to send larger files to learners. Increasing the file sizes that can be sent by WhatsApp for educational purposes is not mentioned in the current academic literature.

4.3.2 Lack of Teaching Features in Social Media Applications

Many social media characteristics restricted use for teaching. A challenge that half of the participants stated they experienced with the application is tools to manage groups and that WhatsApp does not allow new participants to see old messages. Because of this, learners request old notes and teachers must find all the previous resources that they sent and resend them. WhatsApp lacking a presentation mode was identified as a software limitation that reduces the teacher's ability to effectively teach to their students. Also, the language translator in WhatsApp is not good. Participant RP01 highlights that *"WhatsApp doesn't allow us to present a PowerPoint document. The fact that you can't put a presentation up is a challenge."* Two teachers that use the social media application as a virtual class identified that WhatsApp limits the number of users in a video call, and this is a challenge as they cannot have the whole class for a lesson at a time. Participant RP04 further identified that *"there's a translator in WhatsApp [laughter]. It's not the best."* WhatsApp lacks quality features that could help better facilitate online teaching. Enhancing the social media platform to include these features to facilitate better online teaching is not mentioned in the current academic literature.

4.4 Institutional challenges

The school also plays a significant role in the success rates achieved when using social media as an online teaching tool. The challenges identified include intermittent or broken Wi-Fi, social media not being fully supported, and lack in teachers' participation.

4.4.1 Intermittent or Broken Wi-Fi

Most participants indicated that they experienced challenges with Wi-Fi connectivity. The Wi-Fi was either intermittent or inaccessible. Weak signals, having no electricity, and vandalism are mentioned as the reasons for the teachers' connectivity challenges. Participant RP05 stresses that *"Wi-Fi is always down. Like now it's down. I have no electricity in my class. The entire block of our school has no electricity due to vandalism. That also explains why the Wi-Fi is always off."* Similarly, participant RP02 affirms that *"like today, the Wi-Fi isn't working"*

again. So, we have these connection problems throughout the year which is very challenging.” Teachers rely on the school’s Wi-Fi to access social media and subsequently send resources and communicate with students. Similarly, students depend on the school’s Wi-Fi to download resources sent from teachers. When the Wi-Fi does not work, teachers and students must then rely on their own data which can be costly. The school needs to ensure that there is adequate Wi-Fi access and that it works. Within the literature a lack of Wi-Fi access is identified as context specific. Some schools in South Africa provide both teachers and learners adequate access to working infrastructure while others don’t (Chisango and Marongwe, 2021).

4.4.2 Social Media not Being Fully Supported

School policies that do not fully support the use of social media applications for teaching prevent WhatsApp from being fully utilized. Participant RP03 said that *“the school policy does allow for social media to be used in teaching, but it also doesn’t allow cell phone devices to be used by learners, unless prior permission is given.”* Additionally, the code of conduct for C1 states that *“learners are not permitted to use cell phones during school times. Cell phones will be confiscated and returned at a fine of R50,00.”* The school policy declares that learners will be punished when using technology during school times. Students may not use phones unless they are permitted by teachers which can hinder them from making full use of social media. The findings confirm the current academic literature in that school policies tend to not fully support the use of social media in education (Chugh and Ruh, 2017; Manca and Ranieri, 2016; Pokhrel and Chhetri, 2021).

4.4.3 Teachers’ Reluctance to use Social Media for Teaching

Challenges with the technology and teachers not wanting to fully commit to using social media for teaching leads to feelings that the use of WhatsApp within the classroom is a pointless exercise. Participant RP02 asserts that *“it’s pointless if only the young teachers are using WhatsApp, but the older teachers don’t know how to use social media. They’re struggling with no training.”* Additionally, participant RP05 highlights that *“for some teachers their WhatsApp profile is their private life thus they are not willing to share their contact details. Some are parents and they do not want to be disturbed during certain times of the day. Not availing themselves on WhatsApp after school hours.”* The findings confirm the current academic literature in that teachers who tend to not avail themselves to online activities after school hours or lack the ability to use ICTs are inclined to not want to use them (Jenaibi and Mansoori, 2021).

4.5 Summary of findings

The purpose of this study was to describe the challenges secondary school teachers experience when using social media to support teaching. Several categories and associated themes emerged that helped answer the research question. Figure 1 summarises those challenges faced by secondary school teachers when trying to use social media, in particular WhatsApp, as a teaching tool.

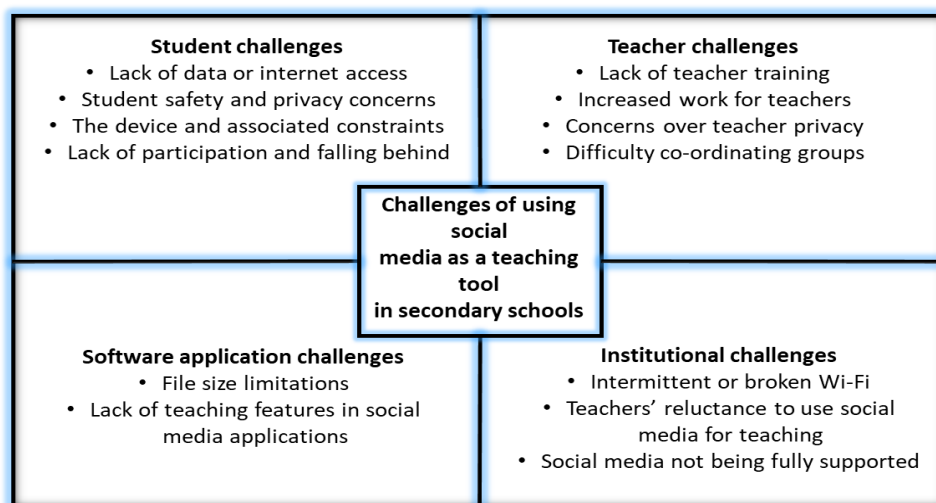


Figure 1: Summary of the challenges associated with social media use for teaching.

The context of this study is South Africa. Hence several of the challenges, such as safety concerns and poor Wi-Fi connectivity are relevant to this context. Yet the findings of this study can potentially be generalised to other less developed countries as well.

5. Conclusion

Our study aimed to answer the question “What are the challenges with using social media to support teaching in secondary schools?” We have described the relevant challenges predominantly in the use of WhatsApp. The contribution of this research is to describe those challenges adding to the academic literature and practically to help teachers have a better understanding of these challenges before using social media for teaching.

The biggest concern within the South African context is the unequal access to the internet and that not all students have a smart phone. There is also the risk of being robbed of their cell phones and privacy and cyberbullying concerns. Hence students not using social media eventually fall behind because they don't receive learning materials from their teachers. Teachers struggle with increased work which using social media brings including working outside the normal school hours as well as privacy concerns. Some of this work is because of the lack of software features. The lack of social media features to support teaching include limits to file sizes, not having a presentation mode and an inadequate language translator. Teachers also lack the required social media training. The schools themselves are not always supportive as they are unable to provide a reliable Wi-Fi connection and school policies often restricted students from using cell phones at school. These challenges made some teachers reluctant to use social media to support their teaching.

This study was limited to the choice of case since only teachers at quintiles four and five secondary schools were interviewed. Future research should involve a wider range of quintiles to produce a more informed study. Additionally, only the teacher's perspective on the challenges associated with social media use within the classroom was obtained. Future research should include the views of students, parents, and management. Finally, most participants used WhatsApp. Future research could also include other social media platforms.

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References

- Al-Bahrani, A., Patel, D. and Sheridan, B. J. (2016) “Have economic educators embraced social media as a teaching tool?” *The Journal of Economic Education*, 48(1), pp. 45-50. Available at: <https://doi.org/10.1080/00220485.2016.1252290>
- Bicen, H. and Taspolat, A. (2019) “Students’ Views on the Teaching Process Based on Social Media Supported Flipped Classroom Approach.” *Brain. Broad Research in Artificial Intelligence and Neuroscience*, 10(4), pp. 115-144. Available at: <https://doi.org/10.18662/brain/08>
- Braun, V. and Clarke, V. (2012) “Thematic analysis.” *APA handbook of research methods in psychology*, 2, pp. 57-71. Available at: <https://doi.org/10.1037/13620-004>
- Chisango, G. and Marongwe, N. (2021) “The digital divide at three disadvantaged secondary schools in Gauteng, South Africa.” *Journal of Education*, (82). Available at: <https://doi.org/10.17159/2520-9868/i82a09>
- Chugh, R., Grose, R. and Macht, S. A. (2020) “Social media usage by higher education academics: A scoping review of the literature.” *Education and Information Technologies*, 26(1), pp. 983-999. Available at: <https://doi.org/10.1007/s10639-020-10288-z>
- Chugh, R. and Ruhi, U. (2017) “Social media in higher education: A literature review of Facebook.” *Education and Information Technologies*, 23(2), pp. 605-616. Available at: <https://doi.org/10.1007/s10639-017-9621-2>
- Ekberg, S. and Gao, S. (2018) “Understanding challenges of using ICT in secondary schools in Sweden from teachers’ perspective.” *The International Journal of Information and Learning Technology*, 35(1), pp. 43-55. Available at: <https://doi.org/10.1108/ijilt-01-2017-0007>
- Giumetti, G.W. and Kowalski, R.M. (2022) “Cyberbullying via social media and well-being,” *Current Opinion in Psychology*, 45. Available at: <https://doi.org/10.1016/j.copsyc.2022.101314>
- Hatip, A. (2020) “The Transformation Of Learning During Covid-19 Pandemic Towards The New Normal Era.” *Proceeding Umsurabaya*. Available at: <https://journal.um-surabaya.ac.id/index.php/Pro/article/view/5947>
- Jenaibi, B. A. and Mansoori, A. A. (2021) “Use of Social Media in Teaching High School Students: A Case of United Arab Emirates.” *Contemporary Review of the Middle East*, 9(2), pp. 158-183. Available at: <https://doi.org/10.1177/23477989211017567>
- Lythreathis, S., Singh, S. K. and El-Kassar, A. N. (2022) “The digital divide: A review and future research agenda. *Technological Forecasting and Social Change*.” 175. Available at: <https://doi.org/10.1016/j.techfore.2021.121359>

- Manca, S. and Ranieri, M. (2016) "Facebook and the others. Potentials and obstacles of Social Media for teaching in higher education." *Computers & Education*, 95, pp. 216-230. Available at: <https://doi.org/10.1016/j.compedu.2016.01.012>
- Mhlanga, F. J. and Ramoroka, T. M. (2021) "Student diversity and online teaching and learning of mathematics in higher education during covid-19 lockdown: planning towards post covid-19 era." *African Perspectives of Research in Teaching & Learning*, 5(1). Available at: https://www.ul.ac.za/aportal/application/downloads/Article%204_oct_2021.pdf
- Moodley, M. (2019) "WhatsApp: Creating a virtual teacher community for supporting and monitoring after a professional development programme." *South African Journal of Education*, 39(2), pp. 1-10. Available at: <https://doi.org/10.15700/saje.v39n2a1323>
- Olowo, B. F., Alabi, F. O., Okotoni, C. A. and Yusuf, M. A. (2020) "Social Media: Online Modern Tool to Enhance Secondary Schools Students' Academic Performance." *International Journal on Studies in Education*, 2(1). Available at: <https://doi.org/https://doi.org/10.46328/ijonse.7>
- Pokhrel, S. and Chhetri, R. (2021) "A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning." *Higher Education for the Future*, 8(1), pp. 133-141. Available at: <https://doi.org/10.1177/2347631120983481>
- Rosenberg, H. and Asterhan, C. S. C. (2018) "WhatsApp, Teacher? - Student Perspectives on Teacher-Student WhatsApp Interactions in Secondary Schools." *Journal of Information Technology Education: Research*, 17, pp. 205-226. Available at: <https://doi.org/10.28945/4081>
- Rwodzi, C., de Jager, L. and Mpofo, N. (2020) "The innovative use of social media for teaching English as a second language." *The Journal for Transdisciplinary Research in Southern Africa*, 16(1). Available at: <https://doi.org/10.4102/td.v16i1.702>
- Spaull, N. (2020) "COVID-19 and schooling in South Africa: Who should go back to school first?" *Prospects*, 51(4), pp. 563-572. Available at: <https://doi.org/10.1007/s11125-020-09470-5>
- Walsham, G. (2017) "Doing interpretive research." *European Journal of Information Systems*, 15(3), pp. 320-330. Available at: <https://doi.org/10.1057/palgrave.ejis.3000589>
- Wyse, A., Stickney, E., Butz, D., Beckler, A. and Close, C. (2020) "The Potential Impact of COVID-19 on Student Learning and How Schools Can Respond." *Educational Measurement: Issues and Practice*, 39. Available at: <https://doi.org/https://doi.org/10.1111/emip.12357>