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Investigating nomophobia as a possible mental health disorder in Gauteng public schools

Abstract

A person's fear of not having a mobile phone on hand may inhibit certain aspects of a person's life. This study sought to investigate nomophobia (the irrational fear of not having access to mobile devices) as a possible mental disorder in the Gauteng education sector. To address nomophobia as a possible mental health disorder in Gauteng schools, one needs to understand the usage of mobile devices by both educators and learners in the classroom context. A mixed-methods, single-case research study (MMSCR) was adopted with two phases. In the quantitative phase, data were collected using a close-ended questionnaire, while in the qualitative phase, data were collected using open-ended questions during face-to-face, semi-structured interviews. The data obtained revealed that respondents displayed mild to severe nomophobia; in some cases, educators displayed even higher levels of nomophobia, compared to learners. The findings of the study indicate, inter alia, that educators feel uncomfortable without access to their mobile devices, while learners admit being addicted to playing games and spending time on social media on their mobile devices. Although both educators and learners use their mobile phones to access resources for schoolwork and to keep in touch with family and friends, they also agree that they constantly use their mobile devices for other, non-education purposes.

Recommendations include that the Department of Education must recognise that nomophobia does affect teaching and learning and must provide counselling therapists for educators and learners. Furthermore, a policy for the use of mobile phones must be introduced for both educators and learners.

Keywords: *addiction, educators, Gauteng schools, learners, mobile devices, nomophobia*

1. Introduction

Mobile devices such as mobile phones have become a necessity for many people throughout the world. The ability to keep in touch with family, business associates, and access to email are only a few of the reasons for the increasing importance of mobile phones. Today's technically advanced mobile phones, referred to as smartphones, which have the functionality of computers (or mini-PCs), are capable of not only receiving and placing phone calls, but storing data,

taking pictures, and even to be used as walkie talkies, to name just a few of the available options (Kingston, 2020).

Not surprisingly, people find that they cannot do without their mobile phones (Bahl & Deluliis, 2019). Nomophobia is the irrational fear of being without one's mobile phone or being unable to use one's phone for some reason, such as the absence of a signal or running out of minutes or battery power (Rouse, 2013). A phobia is an irrational fear (Webster, 2019b). In the case of nomophobia, the events that the user fears are not terribly unlikely, so that part of it is not irrational; what is irrational is the degree of discomfort the users feel at the thought of being separated from their smartphones.

Davie and Hilber (2017:100) succinctly put it, "New technologies have brought new forms of addiction with them." Traditional addictions to alcohol, drugs or gambling have now been joined by addictions to videogames, the internet, and mobile phones. Mobile phone addiction (Wikipedia, 2016; Petter, 2018; Webster, 2019c) is one of the newest forms of digital addiction and, as such, has been less researched than other forms, such as internet addiction, for example (Gezgin, Cakir & Yildirim, 2018). However, researchers in South Korea have found that levels of mobile phone addiction are even higher than internet addiction (Kim, 2013; Kwon, 2013; Jena, 2015). One of the causes posited for this was the convenience of mobile devices. One of the same factors which makes mobile attachment so interesting and useful may therefore also be leading to a dangerous addiction.

Consequently, new technologies create opportunities as well as challenges for teachers and learners. The use of the mobile phone in the classroom has been the subject of educational and media scrutiny. Research shows that mobile phones serve as distractions in the classroom setting and impair learning (Mendoza *et al.*, 2018). The research on teacher nomophobia is scarce. Moreno-Guerrero *et al.* (2020) have done a study on the impact of cell phone use on pre-service teachers, and their findings highlight that it is necessary to make educational interventions about mobile phone usage, as well as to promote education for the responsible and critical use of media and technologies. Thus, teaching and learning can be severely compromised if learners and teachers alike have nomophobia.

2. Research question and objectives

With the above in mind, the research question of the study was phrased as follows: **To what extent does nomophobia impact on mental health of teachers and learners in Gauteng schools?**

The main aim of the study was to investigate whether nomophobia should be considered as a possible mental health disorder in Gauteng public schools.

The specific objectives of this study were to:

- define and describe the concept of nomophobia;
- determine if teachers and learners in Gauteng schools perceive themselves to suffer from nomophobia and, if so, to what extent;
- establish whether nomophobia should be considered a mental health disorder in the Gauteng education sector; and
- discuss how nomophobia as a mental health disorder can be treated and managed to improve the quality of teaching and learning in Gauteng schools.

3. Literature review

Nomophobia (short for 'no mobile phobia') is a word for the fear of, or anxiety caused by not having a mobile phone. It has been considered a symptom or syndrome of problematic digital media use in mental health, the definitions of which are not standardised (Webster, 2019a). Furthermore, the fear of being without a mobile phone led to anxiety and panic attacks in many people (Bhattacharya *et al.*, 2019). Nomophobia has been proposed by psychiatrists as a specific phobia that is a rising trend among high school learners (Cambridge, 2020).

According to Ali *et al.* (2017), psychological factors are involved in the overuse of a mobile phone. These could include low self-esteem (when individuals looking for reassurance use the mobile phone in inappropriate ways, by abusing the capabilities of the mobile phone and accessing unacceptable websites to harass fellow learners and educators) and extroverted personality (when naturally social individuals use the mobile phone to excess). It is also highly possible that nomophobic symptoms may be caused by other underlying and pre-existing mental disorders, with likely candidates including social phobia or social anxiety disorder, social anxiety, and even panic disorder in extreme cases (Ali *et al.*, 2017).

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) of the American Psychiatric Association (Svenaeus, 2014) is the standard manual for assessing psychiatric diseases. The DSM-5 is the product of more than 10 years' effort by hundreds of international experts in all aspects of mental health. Their dedication and hard work have yielded an authoritative volume that defines and classifies mental disorders to improve diagnoses, treatment, and research (Jibson & Seyfried, 2016).

The DSM-5 Anxiety Work Group has put forward recommendations to modify the criteria for diagnosing specific phobias (Bragazzi & Del Puente, 2014). They propose to consider the inclusion of nomophobia in the DSM-5, and provide a comprehensive overview of the existing literature, discussing the clinical relevance of this pathology, its epidemiological features, the available psychometric scales, and the proposed treatment. Even though nomophobia has not been included in the DSM-5 (Davies, 2018), much more attention is paid by the DSM-5 Anxiety Work Group to its psychopathological effects. The interest in this topic is likely to increase, together with the attention and caution not to codify it as pathologically normal behaviour.

The term 'nomophobia' is constructed on definitions described in the DSM-5. It has been labelled as a "*phobia for a particular/specific thing*" (Bhattacharya *et al.*, 2019: 1298). Bhattacharya *et al.* (2019) further explain that it is very difficult to differentiate whether a patient becomes nomophobic due to mobile phone addiction or whether existing anxiety disorders manifest as nomophobic symptoms. Nomophobia may also act as a proxy to other disorders. Bhattacharya *et al.* (2019) caution that we must be very judicious regarding its diagnosis. Some mental disorders can also precipitate nomophobia and vice versa. The complexity of this condition is very challenging to the patients' family members as well as for the physicians, as nomophobia shares common clinical symptoms with other disorders. That is why nomophobia should be diagnosed by exclusion. Bragazzi and Del Puente (2014) conclude that the effects and symptoms of nomophobia can range from psychological, physical, emotional, and social effects and symptoms. Patel (2015) states that at least four -of the following signs and symptoms are thought to comprise criteria for cell phone addiction, namely:

- A need to use the cell phone more and more often.
- Persistent failed attempts to use the mobile phone less often.

- Preoccupation with mobile phone use.
- Turning to a mobile phone when experiencing feelings such as anxiety or depression.
- Excessive use characterised by loss of sense of time.
- Putting a relationship or job at risk due to excessive mobile phone use.
- Decreased tolerance and a need for the newest mobile phones and more applications.
- Withdrawal and anger when a mobile phone or network is unreachable.

While a mobile phone can be a hugely productive tool, compulsive use of this device can interfere with work, school, and relationships (Ali *et al.*, 2017). When you spend more time on social media or playing games than you do interacting with real people, it may be time to reassess your technology use (Bahl & Deluliis, 2019). After all, it is rarely the mobile phone itself that creates the compulsion, but rather the games, apps, and online worlds it connects us to (Battacharya *et al.*, 2019).

Even though people can experience impulse-control problems with a laptop or desktop computer, the size and convenience of mobile phones mean that we can take them just about anywhere and gratify our compulsions at any time. Like the use of drugs and alcohol, they can trigger the release of the brain chemical dopamine and alter one's mood. One can also rapidly build up a tolerance so that it takes more and more time in front of these screens to derive the same pleasurable reward (Davie & Hibber, 2017). At the same time, it can also exacerbate these problems. If one uses one's mobile phone as a 'security blanket' to relieve feelings of anxiety, loneliness, or awkwardness in social situations, for example, one will succeed only in cutting oneself off further from people around one. Staring at one's phone will deny one the face-to-face interactions that can help to connect one meaningfully to others, alleviate anxiety, and boost one's mood. In other words, the remedy one chooses for one's anxiety (engaging with one's mobile phone), is aggravating one's anxiety (Battacharya *et al.*, 2019).

4. Research methodology

This study adopted a mixed-methods, single-case study research (MMSCR) design. Gray (2014) highlights that, in a mixed-methods research study, quantitative and qualitative data are collected sequentially and involve the integration of data at one or more stages in the process of the research. These approaches are complementary, since qualitative findings usually inform and support the quantitative results (McMillan & Schumacher, 2014). The research design in this study involved two distinguishable, but complementary phases:

- Phase 1: The researcher collected quantitative data and analysed it statistically (Creswell, 2014). This phase assisted in determining whether teachers and learners perceive themselves to suffer from nomophobia and determined if teachers and learners perceive that nomophobia has an impact on the quality of teaching and learning.
- Phase 2: The results of Phase 1 were refined and built on by employing a qualitative approach (Creswell, 2014). In this phase teachers and learners made recommendations on how to manage the impact of nomophobia on the quality of teaching and learning.

The researchers have purposefully selected one school from all the Gauteng public secondary schools that has a ban on the use of mobile phones in the classroom. This school was selected for the case, because it has the setting of boundaries on the study units that possess specific characteristics in the theoretical population.

A census sampling approach was used for the collection of data in the quantitative phase. The sample school has a population of 42 educators and 1 020 learners. The entire school (the case) population was surveyed. According to Surbhi (2017), the census sampling method ensures that results are reliable and accurate. For the qualitative phase, 21 participants (6 educators and 15 learners) were interviewed, using convenience, non-probability sampling for selection. This sampling technique has the benefit of being less costly and time consuming, has an ease of administration, usually assures a high participation rate, and it is possible to generalise similar subjects (McMillan & Schumacher, 2014).

5. Data collection and analysis

The type of research approach adopted in a study informed the research instruments to be used. Quantitative data were collected by adapting the Nomophobia Questionnaire (NMP-Q) of Yildirim and Correia (2015) with closed-ended questions. The qualitative data were collected via face-to-face, semi-structured interviews. A mobile phone was used to record each interview, which was later transcribed using MS Word processing software and a computer.

In Phase 1, IBM SPSS software was used to capture, analyse and interpret the data. The data obtained are presented using tables, graphs, and statistical numbers after a total of 620 valid questionnaires had been received and analysed. The quantitative phase measures respondents' perceptions on whether they suffer from nomophobia and to what extent. Respondents were asked to rate 20 statements pertaining to their perception on their personal mobile phone usage. A seven-point Likert-type scale was used to rate the statements, where 1 = strongly disagree, 2 = disagree, 3 = partially disagree, 4 = neutral, 5 = partially agree, 6 = agree and 7 = strongly agree. Higher levels of agreement with a statement would be associated with higher levels of mobile phone usage, while disagreement would be associated with less or no mobile phone usage. The results that are presented show the responses of educators and learners separately.

In Table 1 a breakdown of the scores that give the interpretation of the extent of nomophobia among respondents are given. The results of a univariate analysis of the constructs determined are shown in Table 2 for educators and Table 3 for learners. Furthermore, the scores of the items were added to determine the extent towards which participants experience nomophobia.

Table 1: Interpretation of nomophobia scores

SCORE	INTERPRETATION
20	Absence of nomophobia
21–59	Mild level of nomophobia
60–99	Moderate level of nomophobia
100–140	Severe nomophobia

Table 2: Descriptive statistics of educators' responses to constructs from nomophobia questionnaire (n=33)

Construct	Mean	95% confidence interval for mean Upper bound	95% confidence interval for mean Lower bound	5% trimmed mean	Median	Variance	S D
Not being able to access information	4,992	4,531	5,454	5,047	5,250	1,697	1,303
Giving up convenience	4,049	3,543	4,553	4,058	4,200	2,030	1,425
Not being able to communicate	4,994	4,425	5,464	4,982	5,167	2,149	1,466
Losing connectedness	3,474	2,942	4,016	3,474	3,600	2,295	1,514
Nomophobia questionnaire sum	87,27	79,28	95,26	87,09	88,00	507,89	22,53

Table 3: Breakdown of extent of nomophobia among educators and learners

Construct	Mean	95% confidence interval for mean Upper bound	95% confidence interval for mean Lower bound	5% trimmed mean	Median	Variance	S D
Not being able to access information	4,703	4,600	4,811	4,767	5,000	1,765	1,329
Giving up convenience	4,322	4,212	4,432	4,339	4,400	1,840	1,357
Not being able to communicate	4,682	4,560	4,804	4,735	4,833	2,286	1,512
Losing connectedness	3,746	3,620	3,872	3,728	3,600	2,149	1,555
Nomophobia questionnaire sum	87,2	85,34	89,16	87,74	88,00	553,83	23,53

Table 2 and Table 3 reveal that it is more important for educators to have access to information (M=4,992; SD=1,303) than it is for learners (M=4,703; SD=1,329). Educators also find the need to communicate (M=4,994; SD=1,466) more essential than learners (M=4,682; SD=1,555). The nomophobia questionnaire sum reveals that on average, educators (M=87,27; SD=22,536) and learners (M=87,25; SD=23,534) have a moderate level of nomophobia.

A two-sample t-test was performed to compare the level of nomophobia among educators and learners. There was not a significant difference in the levels of nomophobia between educators (M = 87.27, SD = 22.536) and learners (M = 87.25, SD = 23.534); $t(618) = 0.005$, $p = 0,996$. The results as reported indicate that levels of nomophobia seem to be consistent across educators and learners with no significant differences reported in mean levels ($p > 0.05$).

Table 4 reveals the breakdown of the actual numbers and percentages of educators and learners and their levels of nomophobia as calculated. It also highlights the levels and extent of the nomophobia among educators and learners. The results are also illustrated in Figure 1.

Table 4: Breakdown of extent of nomophobia among educators and learners

Score	Level of nomophobia		Educator	Learner	Total
20	Absence of nomophobia	N	0	0	0
		%	0,0%	0,0%	0,0%
		Lower 95% CL			
		Upper 95% CL			
21-59	Mild level of nomophobia	N	5	76	81
		%	15,2%	12,9%	13,1%
		Lower 95% CL	6,0%	10,4%	10,6%
		Upper 95% CL	30,1%	15,8%	15,9%
60-99	Moderate level of nomophobia	N	17	318	335
		%	51,5%	54,2%	54,0%
		Lower 95% CL	34,9%	50,1%	50,1%
		Upper 95% CL	67,8%	58,2%	57,9%
100-140	Severe nomophobia	N	11	193	204
		%	33,3%	32,9%	32,9%
		Lower 95% CL	19,2%	29,2%	29,3%
		Upper 95% CL	50,3%	36,8%	36,7%

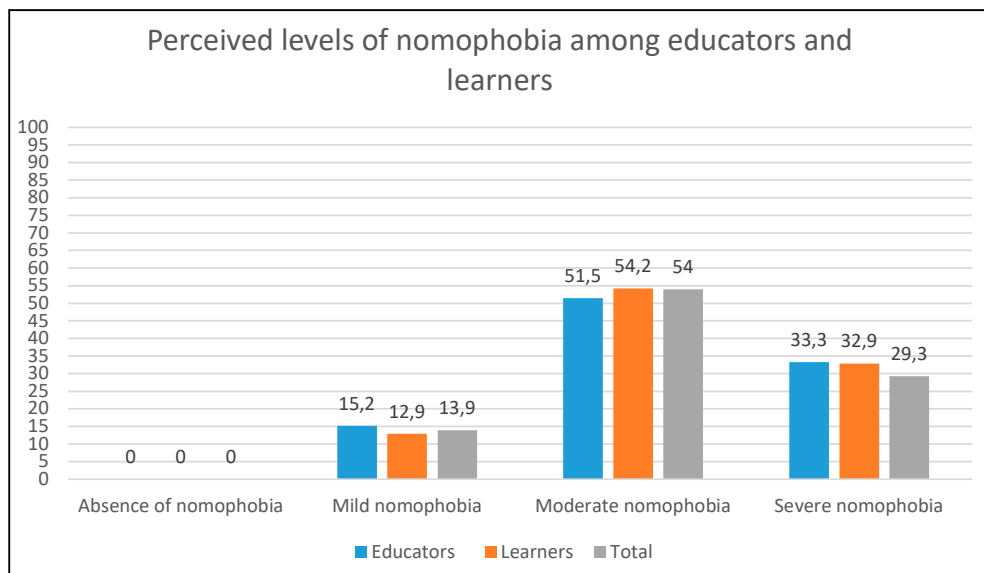


Figure 1: Perceived levels of nomophobia among educators and learners

The global prevalence of nomophobia by severity revealed that the prevalence of moderate to severe nomophobia is 70,76%. The prevalence of severe nomophobia is approximately 21% in the general adult population (Humood *et al.*, 2021). Interestingly, in this study, none (0,0%) of the respondents reported an absence of nomophobia. More educators have severe nomophobia (33,3%; 95% CL 19,2%; 50,3%) than the learners have (32,9%; 95% CL 29,2%; 36,8%). On average, about a third of respondents suffer from severe nomophobia (32,9%; 95% CL 29,3% ;36,7%), which is higher than the global prevalence of severe nomophobia (20,8%; 95% CL 15,45%; 27,43%).

The distribution of the summated average score for nomophobia is shown in Figure 2 (for educators) and Figure 3 (for learners). For educators, a mean of 87,27 was reported, with a standard deviation of 22,536, while a mean of 87,25 and a standard deviation of 25,534 were reported for learners. It is therefore evident from these statistics and the histogram that respondents generally reported a moderate level of nomophobia.

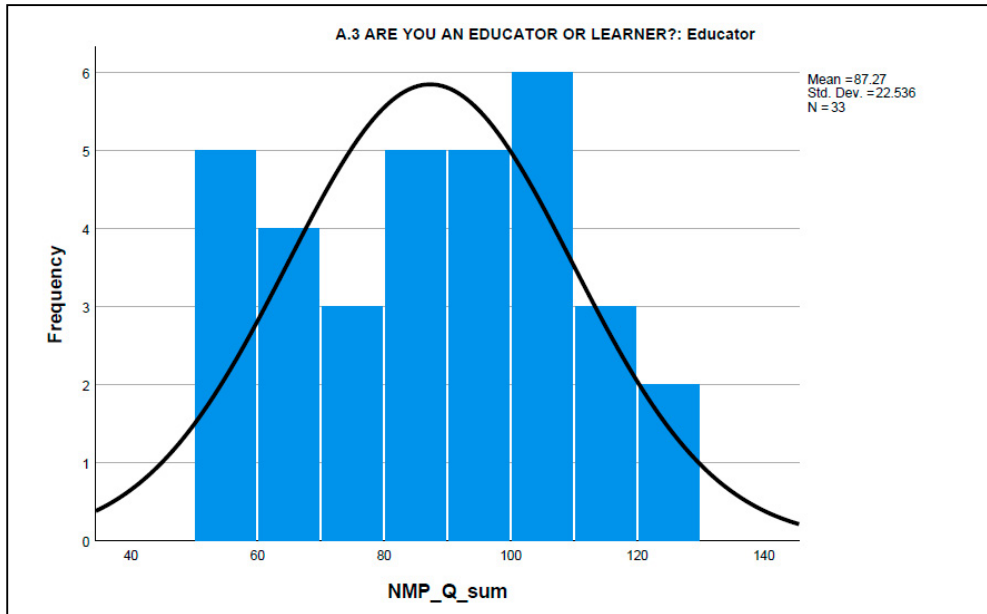


Figure 2: Distribution of summated average score for nomophobia (Educators) (n = 33)

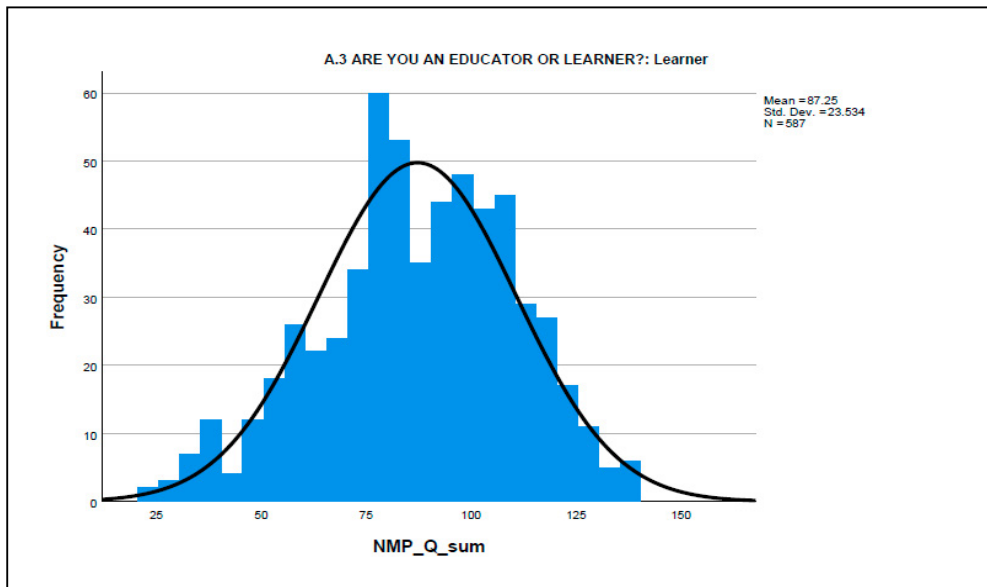


Figure 3: Distribution of summated average score for nomophobia (Learners) (n = 587)

The qualitative data were collected using face-to-face, semi-structured interviews and were transcribed into MS Word format. The results obtained from the interviews have been arranged in sequence with the responses received from the questions in the interviews. The sequential order of the questions has been adhered to as far as possible. These were organised into data segments, which contained similar comprehensive and relevant ideas. In this qualitative case study, the researcher applied thematic analysis with both template and editing strategies to conduct data analysis (McMillan & Schumacher, 2014). This approach allowed the researcher to use both predetermined and nonpredetermined categories during the ongoing process of data analysis. The data segments with same meanings were grouped to form codes based on similarities in sentences or phrases. The sentences and phrases with the same meaning were grouped to represent the main themes and categories.

It emerged from the data collected during the interviews that educators use their mobile phones for access to work-related information. Mobile phones also allow them to stay in touch with people from work, their families, and friends. Educators do feel uncomfortable without access to the information they regularly check up on and they spend a lot of time on their mobile phones. Learners spend a considerable amount of time on their mobile phones. An important theme that emerged from the data illustrated that learners have an affinity for games and spend a lot of time playing these games. When I enquired further, Learner 01, Learner 02, Learner 10 and Learner 11 admitted to being addicted to these games. Learner 10 used the words '*I am hooked on Criminal Case*'. They explained that the games are designed to improve their own scores or take them to the next level, so it is very difficult to leave the game. Learner 15 said,

I was addicted to these games at some point in my life, but currently I stopped since I started with Grade 12.

Learner 04 said he found it relaxing to play games but stressed the importance of discipline,

I find it relaxing to play FIFA, and although it is distracting, I am disciplined enough to stop when I need to.

Learner 05 said, "*The games refresh my mind*". Learner 11 said, "*it relieves stress*", and Learner 15 said, "*it calms you down*". These were the expressions used by learners to justify the playing of games. Learner 06 reminded me that learners have a life outside of school and interests outside of school subjects and curriculum.

The nice thing about having a cell phone is that you can still do things that are outside school but that are still informative. I am a person who is interested in the moon, space, and the whole universe.

Learners used their mobile phones to access resources for schoolwork, and to keep in touch with family and friends.

All the educators agreed that being able to use a mobile phone in the classroom can improve the quality of the lesson. Teacher A warned that there had to be proper controls in place, while Teacher D warned that educators had to know what they were doing and how to use technology. The educators were clear that using the internet for lesson preparation and delivery was vital for the teaching profession. Teacher B stated that if educators' usage of their phones were geared towards education and not socialising, then it could be beneficial to improving the quality of lessons.

Access to information and resources, educators' interaction with the learners, educators' understanding of the learners, dedication of the educator, and having an engaged class are important factors for good-quality teaching. Learners were not in agreement whether using mobile phones for teaching would improve the lessons. Learners were concerned that constant checking of the mobile phone by the educator would break the flow of the lesson.

All educators agreed that if learners were allowed mobile phones in the classroom, the quality of learning would improve and that there are benefits of using mobile phones in the classroom. Teacher F said,

I'm a huge advocate for the use of cell phones in the classroom. We need to equip our learners with the skills needed for the future.

Educators were vocal about restrictions that needed to be imposed.

Learners held the same opinion as teachers and said that the quality of education was dependent on the amount of discipline that learners have. Learners used the following phrases and words to expand on discipline, "Focused" (Learner 01 and Learner 03); "Self-motivated" (Learner 02); "Pay attention" (Learner 03, Learner 08 and Learner 10); "Sit still and listen" (Learner 06); "Dedicated" (Learner 13) and "Make an effort" (Learner 14).

Learners elaborated upon the importance of a good relationship between a learner and teacher in the classroom to improve learning,

Teachers and learners must have a good understanding for the class to perform better (Learner 11);

Good communication, asking questions and making sure you as a learner understand the content (Learner 12); and

Learners and teachers must be partners in the learning process. Learners must want to learn, and teachers must teach properly (Learner 15).

Learner 04 summed up educators' and learners' thoughts on the quality of teaching by saying,

My teacher says that you can take a horse to the water, but you can't make it drink. Similarly, teachers can try their best but if learners are not interested then there is not much they can do.

6. Findings

The quantitative phase revealed that educators displayed higher levels of nomophobia compared to learners, while the qualitative phase indicated that educators use their mobile phones more for work-related information. Educators do feel uncomfortable without access to the information they regularly check up on and, by their own admission, spend a lot of time on their mobile phones. Unlike educators, learners have an affinity for playing games and spend a lot of time on it. Learners use their mobile phones to access resources for schoolwork and to keep in touch with family and friends. Educators and learners prefer face-to-face communication. Educators are not keen followers of social media websites and while learners follow social media websites, they do not spend too much time on it in comparison to other apps.

This results also indicate that educators and learners feel that a mobile phone in the classroom can be a useful educational resource, but they also seem to be wary of the fact that there can be distractions that emanate from the use of mobile phones in the classroom. It is therefore evident from the statistics that respondents generally reported a moderate level of acceptance for the use of mobile phones in the classroom to improve the quality of teaching.

It is also evident from the statistics that respondents generally reported a moderate to high level of level of acceptance for the use of mobile phones in the classroom to improve the quality of learning. The results as reported indicate that the usage of mobile phones in the classroom and the quality of learning seem not to be consistent across educators and learners, with significant differences reported in mean levels. Educators and learners were vocal about the importance of discipline for good-quality teaching and learning. Other factors that educators and learners cited as being important in determining if education is of a high standard were high-stake exams; access to information and resources; teachers who plan their lessons and are prepared; learners that are focused; having proper controls in place and putting into place certain parameters for using mobile phones in the classroom; educators' understanding of the learners; dedication of the educator; having an engaged class; and parental involvement.

It is also therefore evident that respondents generally reported a high level of acceptance for managing the impact of mobile phone distractions in the classroom. The results as reported indicate that managing the impact of mobile phone use in the classroom seems to be consistent across educators and learners. As educators' personal perceptions of nomophobia increased, managing the impact of mobile phone use decreased. However, learners felt that the use of mobile phones on the quality of learning increased as managing the impact of mobile phone use in the classroom increased.

The results indicate that both teachers and learners reveal that mobile phones have an important role to play in education, but they all stressed the importance of having proper protocols in place for the use of mobile phones to be beneficial in education. All respondents mentioned self-discipline with the usage of mobile phones in the classroom.

7. Recommendations

It is evident from the findings that educators and learners do suffer from mild, moderate and severe nomophobia. Nomophobia affects the quality of work delivered by both educators and learners. The Department of Education must recognise that nomophobia does affect teaching and learning and must provide counselling therapists for educators and learners. Furthermore, a policy for the use of mobile phones must be introduced for both educators and learners.

A framework policy for educators must be designed to inform all educators of expectations regarding the use of mobile phones during working hours. It is intended to offer guidance to educators about what constitutes appropriate (and inappropriate) use of mobile phones within the workplace. There must be consequences if educators breach the mobile phone policy, and this would include being invited to an investigatory meeting to ascertain the facts and details about the incident. Thereafter, disciplinary measures will be taken.

Developing a mobile phone policy at schools is essential to ensure learners and educators can enjoy the instructional benefits associated with using mobile phones, while also ensuring the mobile phones do not become a distraction from learning. The policy for learners must be designed to inform all learners of expectations regarding the use of mobile phones in the classroom. It is intended to offer guidance to learners regarding what constitutes appropriate (and inappropriate) use of mobile phones in the school.

8. Limitations of the study

The study was not without limitations. It took place at one selected public secondary school in Gauteng (the case); thus, the results may not be generalisable to other public secondary schools in Gauteng or in South Africa. The study ignored the context of real life and it must be made clear that participants cannot be studied meaningfully by ignoring the social, economic, and political structures that continue to affect all aspects of education.

Even though anonymity was assured to all learners, learners' parents, and educators, some may have felt uneasy about rating their observation regarding the negative aspects of nomophobia and the quality of teaching and learning. Hence, they may have demonstrated subject effects, which are behaviours that may not reflect the practical situation. This situation may have caused errors in the results. Subject effects occur when participants behave in a different way than they would normally behave (McMillan & Schumacher, 2014). People are very aware that their loved ones find it very irritating and frustrating when they are occupied with their mobile phones, so for the study they may have made it seem as if they are not too interested in their mobile phones, when in reality they are.

A delimitation of the study was the selection of the participants. All educators and learners were from a single case. It must be noted that educators and learners from different schools may have differing views on the impact of nomophobia on the quality of teaching and learning.

9. Conclusion

Given the widespread and enduring use of phones, efforts to prohibit or restrict students from using mobile phones in schools are unrealistic. However, school officials can prevail and limit the amount of time spent policing mobile phone policies by taking the time to plan carefully. This study revealed that educators and learners are all prone to some extent of nomophobia. However, a noteworthy fact is that almost a third (32.9%) of respondents displayed severe nomophobia. The aspect of great concern is that the school at which the research was conducted had a ban on the use of mobile phones in the classroom. This indicates that educators and learners are spending a substantial amount of time outside school on their mobile phones.

Educators and learners alike feel that mobile phones should be used for educational purposes in the classroom. Educators and learners were vocal that mobile phones can be brought into the school with certain controls and restrictions. This study further looked at creating a framework for a mobile phone policy for educators and a mobile phone policy for learners that would allow educators and learners to use their mobile phones in school with some provisions. This framework for a policy will allow educators and learners to have some introspection regarding their personal mobile phone usage.

Under the above circumstances and from the research conducted, almost a third (32.9%) of educators and learners suffer from severe nomophobia. Moving forward, educators and learners must be given support if indeed they do suffer from severe nomophobia. This support must be provided by the Department of Education as they do with other mental disorders. Controlling the use of mobile phones in general can improve the quality of teaching and learning and create a pleasurable work environment.

In sum, the cumulative evidence of the risks and detrimental impact of mobile phones on learners' learning, well-being, and safety suggests that educators must address these devices' presence and roles in schools more seriously and systematically than has been the case to date. While some educators and learners believe that mobile phones can be used to enhance and boost instruction, others fear that the negative effects of their use in class clearly outweigh the potential benefits. Finding the right balance for learner mobile phone use in schools is a daunting challenge, calling for a community-wide approach involving learners, parents, educators, school governing bodies, the Department of Education, and broader social awareness about the effect of mobile phones on youth achievement and well-being. Consistency and follow-through on expectations are of fundamental importance if learners are unlikely to abide by rules that are not consistently enforced. Consensus on the appropriate role of mobile phones in schools is unlikely to emerge soon. Even so, creating policies and procedures regulating educator and learner use of mobile phones in schools is an important step towards addressing and ameliorating the growing concerns about their misuse in and around schools, their effect on mental health, and maintaining schools as safe and orderly places for teaching and learning in which all learners can succeed.

References

- Ali, A., Muda, M., Ridzuan, A.R., Nuji, M.N., Izzamuddin, M.H. & Latiff, D. I. 2017. The relationship between phone usage factors and nomophobia. *Advanced Science Letters*, 23(8): 7610-7613. <https://doi.org/10.1166/asl.2017.9534>
- Bahl, R.R. & Deluliis, D. 2019. Nomophobia. In I.R. Association (Ed.), *Substance abuse and addiction: Breakthroughs in research and practice*, pp. 95-306. Hershey, PA: IGI Global. <https://doi.org/10.4018/978-1-5225-7666-2.ch015>
- Bhattacharya, S., Bashar, M.A., Srivastava, A. & Singh, A. 2019. NOMOPHOBIA: NO MOBILE PHONE PHOBIA. *J Family Med Prim Care*, 8(4): 1297-1300. https://doi.org/10.4103/jfmpc.jfmpc_71_19
- Bragazzi, N.L. & Del Puente, G. 2014. A proposal for including nomophobia in the new DSM-V. *Psychology research and behavior management*, 7: 155-160. <https://doi.org/10.2147/PRBM.S41386>
- Cambridge, D. 2020. *Nomophobia*. Available at <https://dictionary.cambridge.org/dictionary/english/nomophobia> [Accessed 24 April 2020].
- Creswell, J.W. 2014. *Research design: Qualitative, quantitative and mixed methods approaches* (4th ed). Los Angeles: SAGE.
- Davie, N. & Hilber, T. 2017. *Nomophobia: Is smartphone addiction a genuine risk for mobile learning?* Available at <https://files.eric.ed.gov/fulltext/ED579211.pdf> [Accessed 1 March 2020].
- Davies, N. 2018. *Nomophobia: The modern-day pathology*. Available at <https://www.psychiatryadvisor.com/home/topics/anxiety/nomophobia-the-modern-day-pathology> [Accessed 20 September 2022].
- Gezgin, D.M., Cakir, O. & Yildirim, S. 2018. The relationship between levels of nomophobia prevalence and internet addiction among high school students: the Factors influencing nomophobia. *International Journal of Research in Education and Science*, 4(1): 215-225. <https://doi.org/10.21890/ijres.383153>

- Gray, D.E. 2014. *Doing research in the real world* (3rd ed). Thousand Oaks, London: Sage Publications, Inc.
- Humood, A., Altooq, N., Altamimi, A., Almoosawi, H., Alzafiri, M., Bragazzi, N., Husni, M. & Jahrami, H. 2021. The prevalence of nomophobia by population and by research tool: A systematic review, meta-analysis, and meta-regression. *Psych*, 3(2): 249-258. <https://doi.org/10.3390/psych3020019>
- Jena, R.K. 2015. Compulsive Use Of Smartphone and its Effect on Engaged Learning and Nomophobia. *SMART Journal of Business Management Studies*, 11(1): 42-51. Available at <http://indianjournals.com/ijor.aspx?target=ijor:sjbms&volume=11&issue=1&article=005> [Accessed 7 February 2022].
- Jibson, M.D. & Seyfried, L.S. 2016. *Diagnostic and statistical manual of mental disorders -American Psychiatric Association* (5th ed.). Michigan: Academic Psychiatry.
- Kim, H. 2013. Exercise rehabilitation for smartphone addiction. *Journal of Exercise Rehabilitation*, 9(6): 500-505. <https://doi.org/10.12965/jer.130080>
- Kingston, K. 2020. *The importance of cell phones in modern society*. Available at https://www.streetdirectory.com/travel_guide/153893/cell_phones/the_importance_of_cell_phones_in_modern_society.html [Accessed 27 February 2020].
- Kwon, M. 2013. The Smartphone Addiction Scale: Development and validation of a short version for adolescents. *PLoS ONE*, 8(12). <https://doi.org/10.1371/journal.pone.0083558>
- McMillan, J.H. & Schumacher, S. 2014. *Research in education: Evidence based inquiry* (7th ed). Harlow, Essex, United Kingdom: Pearson Education Limited.
- Mendoza, J.S., Benjamin, C.P., Lee, S., Minsung, K. & McDonough, I.M. 2018. The effect of cellphones on attention and learning: The influences of time, distraction, and nomophobia. *Computers in Human Behaviour*, 86: 52-60. <https://doi.org/10.1016/j.chb.2018.04.027>
- Moreno-Guerrero, A.J., López-Belmonte, J., Romero-Rodríguez, J.M. & Rodríguez-García, A.M. 2020. Nomophobia: impact of cell phone use and time to rest among teacher students. *Heliyon-Science Direct*, 6(5): 1-8. <https://doi.org/10.1016/j.heliyon.2020.e04084>
- Patel, R. 2015. *Cell Phone use before bedtime might impact sleep, and daytime tiredness*. Available at <https://u.osu.edu/emotionalfitness/2020/09/27/cell-phone-use-before-bedtime-might-impact-sleep-and-daytime-tiredness/> [Accessed 27 September 2020].
- Petter, O. 2018. 'Nomophobia' crowned word of 2018, but what does it mean? Available at <https://www.independent.co.uk/life-style/nomophobia-word-of-the-year-2018-cambridge-dictionary-smartphone-anxiety-a8705106.html> [Accessed 2 July 2020].
- Rouse, M. 2013. *Definition Nomophobia*. Available at <https://whatis.techtarget.com/definition/nomophobia> [Accessed 3 April 2020].
- Surbhi, S. 2017. *Difference between census and sampling*. Available at <https://keydifferences.com/difference-between-census-and-sampling.html> [Accessed 17 August 2021].
- Svenaues F. 2014. The phenomenology of empathy in medicine: an introduction. *Med Health Care Philos.* 17(2):245-8. doi: 10.1007/s11019-014-9547-z.
- Webster, M. 2019a. *Nomophobia*. Available at <https://rebrand.ly/kai7k5a>. [Accessed 1 July 2020].

Webster, M. 2019b. *phobia*. Available at <https://www.merriam-webster.com/dictionary/phobia> [Accessed 11 September 2019].

Webster, M. 2019c. *Power*. Available at <https://www.merriam-webster.com/dictionary/power> [Accessed 9 March 2021].

Wikipedia. 2016. *Nomophobia*. Available at <https://en.wikipedia.org/wiki/Nomophobia> [Accessed 1 July 2020].

Yildirim, C. & Correia, A-P, 2015. Exploring the dimensions of nomophobia:

Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, 49, 130-137. <https://doi.org/10.1016/j.chb.2015.02.059>.