Student satisfaction with access and infrastructure in preparation for self-regulated online learning in South African rural Universities

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Abstract

Sequel to the outbreak of the COVID-19 pandemic, many institutions of learning: primary, secondary schools and universities across the world, regardless of their location have seen the urgent need to transit from onsite to online teaching. Meanwhile, many institutions of learning especially those in rural areas with limited infrastructures, and students are unprepared for such. This is envisaged to negatively impact the learning abilities of students. Hence, this study explored the acceptance and preparedness of students for self-regulated online learning, using a purposively selected South African Rural Higher Institution of Learning (SARHIL). Quantitative method was adopted for data collection in the study. Data was collected from 274 randomly selected undergraduates studying at the selected rural university. The statistical software SPSS version 25 was used to analyse the collected data using descriptive statistics. The finding of the study showed that students from the selected rural university are unprepared for self- regulated learning due to different factors and lack of support. The study recommends amongst others that students should be motivated using various means to embrace self-regulated learning especially as it concerns the current trend in the global world.

Keywords: COVID-19 pandemic, self-regulation learning, South African Rural Higher Institution of Learning (SARHIL)

Introduction

The submission following the work of Aristovnik et al. (2020) shows that the outbreak of the COVID-19 pandemic and its aftermath tends to push the education sector across the globe to self-regulated online learning. According to Wong, Baars, Davis, Van Der Zee, Houben and Paas (2019), in a traditional teaching and learning situation, students who are able to self-regulate are considered more effective than their counterparts who are unable to do so. Meanwhile, Allen and Seaman (2011) had earlier stated that online education is a standard method for course delivery in institutions of learning at various levels. Furthermore, the submission of the study conducted by Allen and Seaman (2011) involving 2512 respondents show that institutions of learning continue to examine offerings of online course as a strategic direction of their organization. Also, as at 2011, the progress rate of online course enrolment seems to have reduced, however, it continues to exceed that of face-to-face courses. Also, the quality put in place for online courses seems to be on the increase. Conversely, with the

outbreak of the global COVID-19 pandemic, online learning seems to have received high recognition following the drastic shift from onsite to online (Uleanya, Ezeji & Uleanya, 2021). However, according to Aristovnik et al. (2020), several factors are to be considered and infrastructures put in place when attempting to improve the level of quality in online self-regulated learning. For instance, Aristovnik et al. (2020) opine that issues revolving around online video conference lecture system either in real-time or pre-recorded are to be considered. Moreover, Hu and Driscoll (2013); Delen, Liew and Willson (2014) as well as Wandler and Imbriale (2017), hold the view that the use of pre-recorded videos which is common in self-regulated learning is crucial. Meanwhile, Aristovnik et al. (2020) state that students tend to tilt towards video conference than audio recording lecturer systems which is a very rare adopted form of online teaching and learning platform during the global COVID-19 pandemic. Meanwhile, online in real time video conference is used to mean that the lecture was received the same time it was being given by the lecturer. It was not a pre-recorded video, rather it was a life lesson through an online video conference system. Examples of the learning platforms and videoconference systems according to Aristovnik et al. (2020) include BigBlueButton, Moodle, MS Teams, Zoom, amongst others.

Additionally, following the work of Wandler and Imbriale (2017), the written form of online learning can also be effective in a self-regulated learning environment. Moreover, Aristovnik et al. (2020), opines that the written communication form of online learning is one of the most appreciated in developing nations compared to other adopted forms, whereas, the video conference system is a more appreciated self-regulated online system in developed countries. Additionally, extant literature such as Aristovnik et al. (2020), Wandler and Imbriale (2017), Vayre and Vonthron (2017), Perry, et al., (2018), The Education Hub (2021) for self-regulated online learning to be successful, several factors which aid desired conducive environment for such purpose need to be considered (Wong, et al., 2019; Anifowoshe et al., 2020; Baloran, 2020; Demuyakor, 2020; Owusu-Fordjour, Koomson & Hanson, 2020; Sahu, 2020; Moran, 2016; Hayes, 2020; Edwards, 2020; Liano, 2020; Smith, 2020). Amongst these factors include: quiet places, computers, good internet, headphones, webcam, and course study materials.

Sequel to the foregoing, it can be stated that the outbreak of the COVID-19 pandemic tends to have forced many institutions of learning to transit from onsite to online learning without considerable preparations. This is envisaged to affect the learning abilities and academic performances of students. Meanwhile, students from rural institutions of learning are likely to be more vulnerable considering their access to limited infrastructures. Hence, this study attempts to explore the preparation of South African Higher Education Institutions and students on preparation for self-regulated online learning following the lessons expected to have been learnt during the period of the outbreak of the COVID-19 pandemic. However, the focus of this study remains on a selected rural South African university. Additionally, in order to achieve the focus of the study on exploring the need for preparation for self-regulated learning following the lessons learnt from the outbreak of the COVID-19 pandemic, attempt was made to proffer answers to the two identified research questions guiding the study. These are: What are the need for the preparation for self- regulated learning in the selected South African Rural Higher Institution of Learning (SARHIL) following lessons learnt from the pandemic? How satisfied are students in the selected South African Rural Higher Institution of Learning (SARHIL) with infrastructural skills for studying from home?

Furthermore, considering the contextual use of terms in different studies, the need arises to briefly conceptualise the terms self-regulated learning and online self-regulated learning following submissions from extant literature. Thus the heading below which reads as: self-regulated learning vs self-regulated online learning

Self-regulated learning vs Self-regulated online learning

Self-regulated learning entails the act of students becoming in charge and experts of the processes involved in their personal learning activities (Zimmerman, 2015). According to Zimmerman (2001), self-regulated learning is the self-directive practices observed and carried out by an individual in order to improve his/her abilities into task-related skills. The abilities include: mental and physical (Zimmerman, 2001). The submissions by Zimmerman (2001, 2015) on self-regulated learning show that it involves processes observed and carried-out by students by themselves in order to improve themselves and enhance their skills towards becoming better in life. Self-regulated learning is also perceived as the abilities of individuals in the context of this study, students to be able to understand and control their different learning environments (Schraw, Kauffman, & Lehman, 2002). By implication, self-regulated online learning would mean the act of students understanding and personally taking control of their own learning environments, coordinating their learning activities targeted at improving themselves using different online learning platforms. Such online learning platforms include: Zoom, BigBlueButton, Moodle, MS Teams (Aristovnik, et al. 2020).

Additionally, the conceptual framework of self-regulated learning is essential towards understanding different learning traits such as cognitive, emotional and motivational (Panadero, 2017). Based on the points of Panadero (2017) following the submissions of Zimmerman (1989) and Zimmerman and Moylan (2009), different views of self-regulation in learning can be deduced. However, for the purpose of this study, only two views are considered in order for inference to be made with regards to online self-regulated learning following the outbreak of the global COVID-19 pandemic. The three different phases are as identified and explained below

View 1: Person, Behaviour, Environment

One is expected to understand one's person, thereafter, behaviour, as well as environment. Understanding of these three factors: person, behaviour and environment, aids a person's better performance. In the context of this study, students' abilities to understand their nature, is expected to help them know how to behave in a given environment such as the online learning platform in order to accomplish their desired goal(s).

View 2: Forethought, Performance and Self-reflection

Stage 1 - Forethought: entails analysing tasks to be carried out, and beliefs revolving around motivating oneself. At the point of task analysis, goals to be achieved are to be set, thereafter one is expected to plan strategically towards achieving the set goals. At the level of beliefs revolving around motivating oneself, the following are expected: one is to believe in one's ability to organise and carry-out certain expected actions in order to achieve a desired goal, trust the actions to be and carried out, motivate oneself following one's values, and constantly remain goal oriented. In the context of this study, forethought would imply students analysing what is to be done following their set goals to be achieved through online self-regulated learning, plan, organise and carry-out the necessary actions.

Stage 2 - Performance: At this stage self-control, and self-observation are to be considered. With regards to self-control, students are to be cautious of factors such as time management, their interests, especially as it or does not concern their set goal in their online self-regulated learning, understand how their environments are structured, how, when and where to seek help, amongst others.

Stage 3 - Self-reflection: At this stage self-judgement and self-reaction are needed. At the point of doing self-judgement, students are expected to evaluate themselves, as well as possible cause and effect of their various actions with regards to the set goals of online self-regulated learning. Meanwhile, when self-reaction is done, students are to examine the extent of satisfaction experienced and means of adapting within a given space, in the context of this study a learning environment for better desired results. With regards to online self-regulated learning, students are expected to judge their actions, examine themselves in relation to their online learning, in order to improve.

From the foregoing, self-regulated can be considered as being imperative. Meanwhile, issues revolving around access and infrastructure are crucial as they somewhat determine the successful pursuit and achievement of self-regulated learning. Thus, the reason for this study which explores students' satisfaction with regards to access and infrastructure in preparation for self-regulated online learning, using a selected rural university in South Africa as case study.

Research Methodology

The survey adopted quantitative method in order to collect data This is in congruence with Creswell (2014) and Kumar (2019) who view quantitative research method as a useful approach to collect data from a representative sample and can therefore be generalized to a population. The study population comprised undergraduates from a selected rural based university in South Africa. Rural university was considered in this study based on the perception that they are likely to be more affected compared to their urban counterparts following the outbreak of the COVID-19 pandemic. Moreover, students in rural institutions of learning are perceived to be given participatory access. Participatory access in this context is used to mean allowing students to enrol for study without necessarily taken cognizance of the quality of education provided. This is with regards to the availability of needed infrastructures available in rural institutions compared to those in urban based institutions. Purposive and random sampling were adopted for selecting the institution and respondents respectively. For this study, a total of 274 undergraduates were randomly selected from across all faculties in the institution under focus. This was after the collection of ethical clearance by the researchers. Following the restrictive COVID-19 measures, the questionnaire was administered through an online platform. The link to the questionnaire was sent to the students via an online platform. The questionnaire comprised two sections. The first section was targeted at retrieving demographic data of respondents, while the second section comprised items which were used to retrieve information revolving around the self-regulated online learning of respondents during the outbreak of the COVID-19 pandemic. The statistical software package called Statistical Package for the Social Science (SPSS) version 25 was used to perform descriptive statistical test. The results are presented using figures as shown in the appendix below. The demographic information of the sample of the study are as presented in table 1.

Ethical Considerations

Respondents were given the details of the study. Participation in the study was anonymous and voluntary, and respondents had the levity of withdrawing from the study at any time without consequences. For data-protection reasons, the online survey was made open to students who were 18 years of age and above and were enrolled in the selected rural institution of higher learning. Meanwhile, before embarking on this study, the researchers ensured that they applied for and received an ethical clearance certificate which gave them the permission to conduct the study.

Table 1: Demographic data of students from the South African Rural Higher Institutions of Learning (SARHIL)

Biographical information	Criteria/ interval
Gender	Male Female
Age group	Under 20 Years 20 – 24 Years 25 – 30 Years Over 30 Years
Level of study	First Second Third
Field of study	Arts and Humanities Social Sciences Applied Sciences Natural and Life Sciences

Results and Discussions

The results of the study are as presented and discussed following the identified research questions guiding the study.

Research Question 1: What are the need for the preparation for self- regulated learning in the selected South African Rural Higher Institution of Learning (SARHIL) following lessons learnt from the pandemic?

Figure 1: Satisfaction of Students with Online Learning

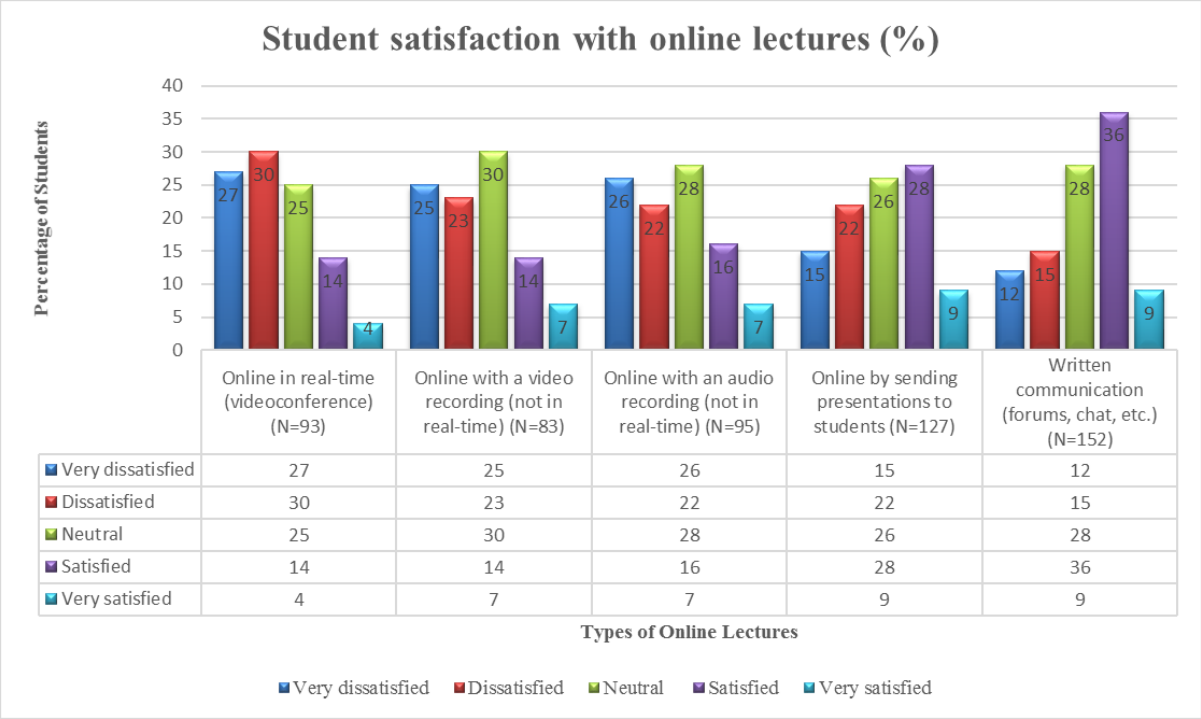


Figure 1 presents the results of analysed data from respondents from the selected South African Rural Higher Institution of Learning (SARHIL) on the satisfaction of students with online learning. The result shows that 57% of the respondents were dissatisfied with online in real time video conference, 25% were neutral while 18% were satisfied. This finding shows that majority of the respondents were not pleased with the life lesson. It implies that they possibly had certain challenges which made the online video conference system lecture dissatisfying to them. This finding agrees with the work of Aristovnik et al. (2020) who hold the view that whilst students from advanced countries across the globe were more satisfied with the adoption of real time online video conference system for lectures during the time of the outbreak of the COVID-19 pandemic, their counterparts from developing countries which are predominantly African and Asian nations were more dissatisfied. Meanwhile, Aristovnik et al. (2020) further posit that real time online video conference lecture system was the most common adopted method during the outbreak of the COVID-19 pandemic. This finding of the study when compared to the findings of the work of Aristovnik et al. (2020) suggests that the success of the adoption of self-regulated online learning in education is hinged on the level of advancement in the nation, especially with how it concerns technology. This implies that nations that are technologically poor are likely to be adversely affected in the adoption of online self-regulated learning amidst the outbreak of the COVID-19 pandemic.

Figure 1 further shows that 48% of the respondents were dissatisfied with online video recording, not in real time, 30% were neutral while 21% were satisfied. This finding shows that many of the respondents were dissatisfied with the adopted system though it has to do with pre-recorded videos. This finding agrees with one of the findings of the work of Aristovnik et al. (2020) which showed that students from Africa were more dissatisfied with their online learning inclusive of the use of pre-recorded videos compared to their counterparts from places such as Oceania, North America, and Europe. Meanwhile, according to Hu and Driscoll (2013); Delen, Liew and Willson (2014) as well as Wandler and Imbriale (2017), the use of pre-recorded videos in self-regulated learning is a common trend and vital for such purpose. This

suggests the level of unpreparedness and unacceptance of self-regulated online learning in the selected South African rural university with regards to pre-recorded videos. Suffice to state students in the selected institution are likely to disregard the option of pre-recorded videos in embracing online self-regulated learning even amidst the COVID-19 pandemic. Such is envisaged to affect their learning abilities as well as academic performances.

Additionally, regarding online self-regulated learning with the use of audio recording, though not in real time, figure 1 indicates that majority of the respondents were dissatisfied with such system. For instance, the finding shows that while 48% of the respondents were dissatisfied with audio recording, not in real time, 28% were neutral, while 23% were satisfied. This finding corroborates the work of Aristovnik et al. (2020) who opine that while students from across the globe tend to appreciate video conference lecturers, they were more dissatisfied with the use of audio recording for lectures. Meanwhile, Aristovnik et al. (2020) state that audio recording was the most erratic adopted form of online teaching and learning platform during the global pandemic of the COVID-19. This finding implies that there is need to discard the adoption of pre-recorded audio form of online self-regulated learning since it is unaccepted by many students.

From the foregoing, considering the level of satisfaction and dissatisfaction expressed by students from the selected South African Rural Higher Institution of Learning (SARHIL), online self-regulated learning is yet to be embraced. This is as it concerns the selected rural university and by inference the nation and possibly continent at large.

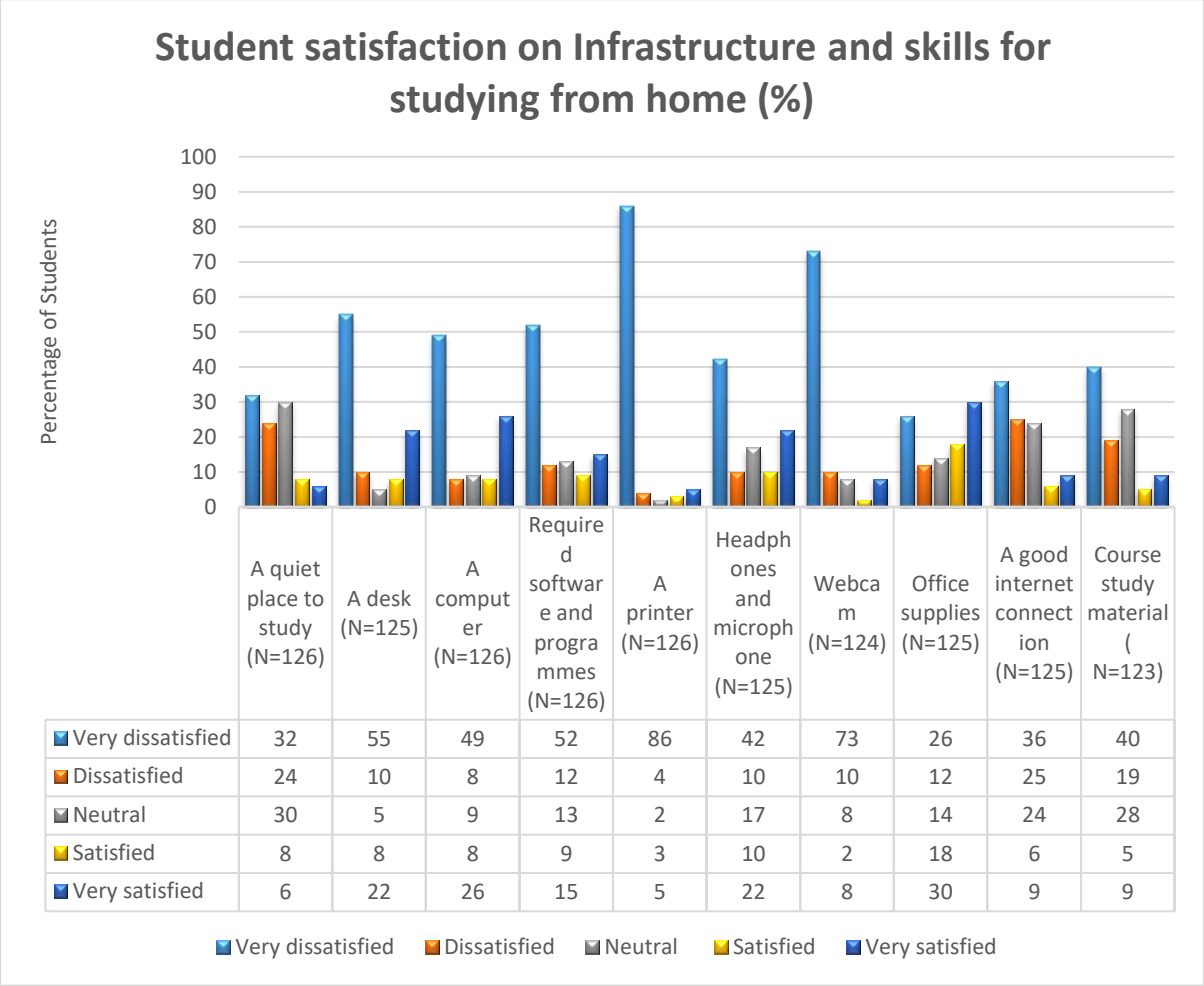
Additionally, following other modes of online self-regulated learning, figure 1 presents results of analysed data on respondents' view on online learning by sending presentations to students. The result showed that 37% of the respondents were dissatisfied with the approach of online learning by sending presentations to students, 26% were neutral, while 37% were satisfied. This finding suggests that the level of students' satisfaction in term of the identified approach is somewhat uncertain, as the number of respondents who indicated that they were satisfied remains equal with those who expressed dissatisfaction. In congruence to this finding, review of the work of Hein (2014) suggests that the mode of sent presentations is contributory to its acceptance rate. The finding of the work of Hein (2014) shows that students would always prefer online presentations with voice-over to those without such. Suffice to state that the mode of the presentation could be contributory to the responses of respondents in this regard.

Furthermore, figure 1 also presents the responses of respondents' level of satisfaction on the adoption of written communication such as forums, chats, amongst others. The result shows that while 27% of the respondents were dissatisfied with the adoption of written communication such as forums, chats, amongst others for online learning, 28% were neutral and 45% were satisfied. This finding shows that students were more satisfied with the written communication form of online learning. This finding agrees with the work of Aristovnik et al. (2020) which indicates that students from many African nations preferred the use of written communication of online learning the most compared to other adopted forms. Moreover, Wandler and Imbriale (2017) opine that written form of online learning can also be effective in a self-regulated learning environment. This finding may be as a result of students' familiarity with written communication form of teaching in the traditional classroom setting. This finding suggests the need for a gradual process to be followed in the transition from onsite to online self-regulated learning. This is envisaged to prepare students, while they are taken from the process of what is known and appreciated by them to the unknown or what they may consider complex. However, with the outbreak of the COVID-19, the transition from onsite to online self-regulated learning has been abrupt, thus making it difficult for students to cope.

Research Question 2: How satisfied are students in the selected South African Rural Higher Institution of Learning (SARHIL) with infrastructural skills for studying from home?

Sequel to the need for availability of certain infrastructures to enable self-regulated learning, and in an attempt to trace the lessons being learnt from the outbreak of the COVID-19 pandemic, there was need for the researchers to investigate the satisfaction of students on the provided infrastructures for self-regulated online learning.

Figure 2: Satisfaction of students in the selected South African Rural Higher Education Institution (SARHEI) with infrastructure and skills for studying from home



	A quiet place to study (N=126)	A desk (N=125)	A computer (N=126)	Required software and programmes (N=126)	A printer (N=126)	Headphones and microphone (N=125)	Webcam (N=124)	Office supplies (N=125)	A good internet connection (N=125)	Course study material (N=123)
Very dissatisfied	32	55	49	52	86	42	73	26	36	40
Dissatisfied	24	10	8	12	4	10	10	12	25	19
Neutral	30	5	9	13	2	17	8	14	24	28
Satisfied	8	8	8	9	3	10	2	18	6	5
Very satisfied	6	22	26	15	5	22	8	30	9	9

Figure 2 is used to present findings following the analysed data on the level of students' satisfaction with the infrastructures made available and skills possessed to ensure self-regulated learning especially during the period of the outbreak of the COVID-19 pandemic. Respondents were allowed to indicate their level of satisfaction to various items on the list. The result shows that for studying from home during the outbreak of the COVID-19 pandemic 56% of the respondents were dissatisfied about the availability of a quiet place to study, 30% were neutral and 14% were satisfied. This finding suggests that lack of a quiet place of study affects students' acceptance of self-regulated learning in the selected institution of higher learning. The finding concurs with the work of Aristovnik et al. (2020) who state that during the period of the outbreak of the COVID-19 pandemic, several students were in want of quiet places where they could study. Moreover, in congruence to this finding, the work of Wandler and Imbriale (2017) supports the notion that in self-regulated learning scenario, there is need for quiet places

of study to enhance comprehension. In other words, lack of quiet places to study affected the online self-regulated learning of students in the selected rural institution of higher learning during the period of the outbreak of the global COVID-19 pandemic.

The finding from figure 2 shows that while 65% of the respondents expressed dissatisfaction in having desk for study, 5% were neutral, and 30% were satisfied. This indicates that lack of desk for study is a factor hampering self-regulated learning for students in the selected South African Rural Higher Institution of Learning (SARHIL). Meanwhile, in self-regulated learning, a conducive environment is needed (Vayre & Vonthron, 2017; Perry, et al., 2018; as well as The Education Hub, 2021). The Education Hub (2021) further explains that the use of a desk is crucial and may be considered as one of the enabling infrastructure needed for creating the needed conducive environment for the self-regulated learning.

Further finding from figure 2 shows that 57% of the respondents indicated dissatisfaction over access to a computer, 9% were neutral and 34% expressed satisfaction. This finding indicates that students from the selected South African rural university lacked access to computer. The finding concurs with the finding of the work of Aristovnik et al. (2020) which shows that various students from developed nations had access to computers during the COVID-19 pandemic. This suggests the level of unpreparedness of students in the selected rural university in the transition to online self-regulated learning. For instance, review of extant literatures such as Wong, et al (2019), Anifowoshe et al. (2020), Baloran (2020), Demuyakor (2020), Owusu-Fordjour, Koomson and Hanson (2020), Sahu (2020), suggest that online self-regulated learning is next to being unrealised without access to and the use of a computer. Thompson (2021) further adds that computer is a major item needed for self-regulated online learning. Suffice to state that without due access to computer, students learning abilities may be affected in self-regulated online learning situation.

Figure 2 also shows that 64% of the respondents were dissatisfied concerning their access to needed software and programmes, 13% were neutral and 24% were satisfied. Similarly, 90% of the respondents indicated that they were dissatisfied with their access to printer, 2% were neutral and 8% were satisfied. The finding from figure 2 further shows that while 52% of the respondents expressed dissatisfaction to access to headphone and microphone, 17% were neutral and 32% were satisfied. In addition, figure 2 shows that 83% of the respondents were dissatisfied with access to webcam, 8% were neutral, and 10% were satisfied. These findings corroborate the work of Aristovnik et al. (2020) who hold the view that during the period of the outbreak of the COVID-19 pandemic, students from many African nations alongside other developing countries were affected due to lack of required infrastructures for online learning. Moreover, following the works of Moran (2016) and Hayes (2020), Edwards (2020), Liano (2020), and Smith (2020) equipment such as headphones, webcam, amongst others are important and needed for self-regulated online learning. These findings suggest that students in the selected rural institution of higher learning are likely to be affected academically due to lack of certain required infrastructures for online self-regulated learning.

In addition to the findings from figure 2, 38% of the respondents indicated dissatisfaction with access to items described as office supplies, 14% were neutral, and 48% expressed satisfaction. The finding indicates that majority of the students in the selected rural institution of higher learning had some forms of access to items considered as office supplies. According to Green (2016), such items can include writing tools like pens, pencils, papers, erasers, sharpeners. Thompson (2021) in support of needed office supplies for self-regulated online learning states that items like external monitor(s), should be considered as office supplies in such learning environment. This finding suggests students willingness to make available for themselves

certain relevant materials. This could be as a result of the cost of the materials. More so, many of such materials are used in the traditional classroom. Conversely, this finding further suggests students' attachment to status quo: their regular traditional classroom situation.

Furthermore, results presented in figure 2 shows that whilst 61% of the respondents were dissatisfied with access to internet connection, 24% were neutral, and 15% were satisfied. This finding corroborates the works of Uleanya, Gamede and Kutame (2020) as well as Aristovnik et al. (2020) who state that various African nations lack good internet connection to enable student to study. Uleanya and Gamede (2019) and Wong et al. (2019) had earlier stated that good access to quality internet connection is important for online teaching and learning exercises. Also, results presented in figure 2 show that 59% of the respondents expressed dissatisfaction in access to course study material, 28% were neutral, while 14% indicated that they were satisfied. This finding coincides with the work of Aristovnik et al. (2020) who explain that during the period of the outbreak of the global COVID-19 pandemic, students from many African nations had limited access to course study materials for online learning. Whereas, according to Wong, et al (2019), and Mclennan (2020), making available course study material in an online teaching and learning environment is necessary. This suggests the extent to which students' learning abilities and academic performances can be hampered due to lack of access to course materials following the transition to online self-regulated learning though due to the COVID-19 pandemic.

From the foregoing and presented analysed results, it can be stated that while students from the selected institution can easily access materials that may be considered more important and needed in traditional classroom scenarios, they lack essential materials needed for online self-regulated learning. Also, from the analysed data, it can be inferred that lack of the desired enabling environment and enhancing infrastructures constituted challenges for students in the selected rural university during the outbreak of the COVID-19 pandemic. Meanwhile, following the views of scholars such as Zimmerman (2011), Zimmerman and Moylan (2009), Zimmerman (2015) and Panadero (2017), on the self-regulated learning theory and by inference online self-regulated learning, enhancing environment is pivot for success to be achieved by students. Surmise to state that if the desired enabling environment is not made available for transition to self-regulated online learning, the learning abilities and consequently, the academic performances of students would be hampered.

Conclusion and Recommendations

The survey explored the issue of self-regulated online learning following the outbreak of the COVID-19 pandemic. The study was conducted using a selected South African Rural Higher Institutions of Learning (SARHIL). The data for the study was retrieved through the use of an online questionnaire. The finding of the study showed that students in the selected South African rural institution of learning are unprepared for online self-regulated learning and are reluctant to embrace such even amidst the outbreak of the COVID-19 pandemic. Also, non-availability of the needed supportive infrastructures had impact on the level of acceptance of self-regulated online learning during the outbreak of the COVID-19 pandemic by the students. The findings of the study showed that students in the selected rural South African university were unprepared for self-regulated online learning. Thus, their learning abilities and by extension their academic performances are at stake if nothing is done to salvage the situation by making and helping them to see the need to embrace, accept and adjust to the use of online self-regulated learning. To this end, the following recommendations are made:

- Students should be made to come to terms with the recent trend in the education sector with regards to the shift from onsite to online learning, especially following the outbreak of the COVID-19 pandemic. This can be done through a periodic open discussion or organised orientation programme for students. Such programmes should be targeted at making the students to appreciate the shift from onsite to online teaching and learning exercises.
- Also, lecturers can be used to educate and motivate students to embrace online self-regulated learning. This can be through their student-lecturer relationship, as well as lesson presentations, assessment and other teaching and learning related engagements.
- Efforts should be made to educate students on self-regulated learning: its importance, as well as how to engage in such. This can be done through organised seminars and workshops. This would enable students to be able to adapt to the new trend of self-regulated online learning.
- Education stakeholders in rural communities should be involved and made to participate in supporting students with online self-regulated learning. Such support can be in the provision of necessary infrastructures that can enhance students online self-regulated learning. Education stakeholders can also assist in creating awareness on the transition from onsite to online self-regulated learning especially following the outbreak of the COVID-19 pandemic.

Limitation of the study

The study focused on undergraduates' preparedness, acceptance and use of online self-regulated learning, especially following the outbreak of the COVID-19 pandemic and abrupt shift from onsite to online learning. However, the study was limited to only a selected rural university in South Africa. Hence, it is suggested that a similar study be replicated using two or more rural universities across the nation or continent. This would aid a more generalised result. Also, the data for the study was collected through the use of quantitative method which was analysed using descriptive statistics. In future, it is suggested that a study which involves the collection of quantitative and qualitative data and uses a more sophisticated analytical package can be conducted.

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