

Student Support for Online Learning at the University of KwaZulu-Natal: A Psychological Readiness and Student Satisfaction Perspective

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Abstract

Remote working and online learning are rapidly becoming the norm in higher education and other sectors of society. Student engagement in online learning requires enthusiasm and effort from learners, as well as a necessary supportive environment to improve learning outcomes. Understanding students' preparedness to undertake online learning is crucial to the successful usage of online learning in the post-Covid-19 era. This article discusses empirical results of psychological readiness, amongst others, of students to use online learning in a university environment for success. The study that directed this article was conducted amongst 400 undergraduate students in the School of Management, Information Technology and Governance (SMIG) at the University of KwaZulu-Natal (UKZN), employing a descriptive research design and convenience-based purposeful sampling. Analysis of data revealed evidential areas relating to psychological readiness for online learning that may require support interventions to address certain issues. These include distraction from other online activities when learning online, not having a preference for online learning, difficulty in coping with online learning, and respondents being fearful or anxious when learning online. In addition, support may need to be provided to improve overall student satisfaction with online learning and related aspects. Correlational analysis revealed that overall student satisfaction with online learning would increase if students could cope better with online learning, engage effectively with online learning materials, and work at their own pace.

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Given online learning expansion in higher education, the findings of the study underscore the utility of adequate student preparedness and sustained student support for the prevalence and significance of flexible learning in a dynamic post-Covid-19 environment.

Keywords: online learning; higher education; psychological readiness; student preparedness; student satisfaction; student success; supportive environment

Introduction

Online learning is the “new order” in the 21st century and beyond as the fastest-growing segment of higher education. In this article, the co-researchers empirically examine the discussion surrounding the efficacy of online learning with particular reference to student support in the higher education arena. An overview of pertinent literature is provided to foreground online teaching and learning during the pandemic and in the post-Covid-19 era. Following this, we briefly describe some of the aspects to be considered for a more effective teaching medium, bringing teaching and learning closer to students in real-time. We explore some student support interventions and debates around these important issues, including the psychological readiness of students for this experience in higher education. Some data are shared on the feedback obtained from students’ responses on the uptake with the University of KwaZulu-Natal’s (UKZN) School of Management, Information Technology and Governance (SMIG) as a case study. Some tangible recommendations are put forward, and concluding remarks are made.

The article presents empirical evidence on the efficacy of online learning in higher education, emphasising understanding students’ preparedness to undertake online learning as being crucial to the successful usage of online learning in the post-Covid-19 era. Many studies comparing individual classes across online, blended, and face-to-face modalities showed essentially equivalent results in cognitive gains and mixed results in behavioural and emotional engagement (Cosgrove and Olitsky 2015, Garratt-Reed et al. 2016, Reece and Butler 2017, and Tseng and Walsh 2016 in Paulsen and McCormick 2020, 20).

Literature Review Focusing on Online Learning in Higher Education

The extent to which students feel prepared to transition from a traditional learning environment to online learning is a significant factor in their anxiety (Abdous 2019 in Hasking et al. 2021, 60). While the online learning environment can provide a more comfortable venue for participation amongst students who are shy or lack confidence and feel intimidated by the public settings in a face-to-face classroom (Clark-Ibáñez and Scott 2008 in Driscoll et al. 2012, 314), it is not without challenges regarding student support on many levels. Some issues with online learning reported by Dumford and Miller (2018) necessitating student support are as follows:

- Adequate technological support must be given due consideration to online education.
- It is difficult for instructors to adapt certain activities, viz. practical assessments, continuous assessment, and proctored tests to the online format without missing content knowledge or interaction between students and/or lecturers.
- Online students may feel more isolated from their lecturers if assessments like multiple-choice quizzes and tests are predominately used.
- There is the issue of cheating, or dependence on the summative feedback from graded quizzes/tests, which results in limited formative feedback given to students during the learning process.
- Adapting the Learning Management System (LMS) and contents to mobile devices is needed, as these devices are more popular among younger students.
- Students studying online often have different backgrounds in terms of gender, age, discipline, and prior education, influencing their academic success.
- Students may need additional motivation, organisation, and self-discipline to be successful in online learning (Jacob and Radhai 2016).
- Empirical findings revealed that first-year students enrolled in online classes report lower levels of collaborative learning, fewer discussions with others, and lower quality of interactions.

Other factors that present as barriers to online learning issues requiring support are reported by Mutiara (2020) as follows:

- Lack of confidence and experience in using technology may present a barrier for some students.
- Lack of face-to-face contact with lecturers and other students may present difficulties in understanding course content.

Findings of a survey among 2 007 undergraduate students at a public, metropolitan university in the United States on student preferences for online versus on-campus courses, revealed challenges of poor lecturer interaction in their worst online classes where course material was uploaded and tests administered with minimal lecturer presence. Another challenge reported regarding the worst online classes was that lecturers did not provide adequate clarity on assignments, and students further viewed assignments as online “busy work” unrelated to class hours. These findings demonstrated the need for increased staff professional development in online course design and facilitation oriented towards student experience and staff expertise (Glazier and Harris 2021). Students described lecturers of online classes as available rather than caring. Glazier and Harris (2021) claimed that building rapport and relationships with students in online classes could improve retention and success.

Challenges to Online Learning

The harsh reality is the effects of isolation and social distancing from students’ peers and lecturers that are severely compounded by disruption to education and the move to

online learning. Although there are benefits and challenges with online learning, adapting to a new educational style can produce significant anxiety for students (Abdous 2019 in Hasking et al. 2021, 60). There is the added burden that many students do not have regular access to virtual technology, and for some of them, the Internet is not accessible, given their geographical locations for residency (Hasking et al. 2021, 66). A further concern worth prioritising is that of provisioning and scaling up mental health facilities to students, given the range of psychological issues and strain that working online could create for them.

In another study by Muilenburg and Berge (2005, 29), it was reported on a large-scale ($n=1\ 056$) that exploratory factor analysis identified underlying constructs that constituted student barriers to online learning. The following factors were found to be considered as challenges to online learning from a student perspective: i) administrative issues; ii) social interactions; iii) academic skills; iv) technical skills; v) learner motivation; vi) time and support for studies; vii) cost and access to the Internet; and viii) technical problems. One of the most critical challenges to students learning online was a lack of social interaction ($M=2.36$).

Dhawan (2020, 9) holds the view that efforts should be made to humanise the learning process to the best extent possible. Personal attention should be provided to students to adapt easily to this learning environment.

Support Interventions Helping Students Cope with Online Learning

Aspects for significant attention include communication, collaboration and academic support afforded to students in the transition of teaching and learning. The research outcome substantiates the clarification in helping students to cope with the notion of online learning and to build students' confidence and ability to use various modes of online learning interventions, both during and in the post-Covid-19 era, while embracing teaching and learning of the future.

Several studies have confirmed that online communication is an essential feature of online teaching and learning, is a strong predictor of student achievement, and positively influences "perceived learning, grades, and quality of their work" (Nandi et al. 2015 in Hwang 2018, 96). "Discussion forums, assigned peer essay reviews and workshops, and small group work" are techniques used to create community support within the asynchronous courses (Poll et al. 2014 in Hwang 2018). Collaboration in the online learning space helps to support student learning, build community, and support persistence (Thomas et al. 2014 and Tinto 1975 in Hwang 2018). Communication between student-instructor and student-student "decreases the feeling of isolation, substantiates academic and social integration, and thus improves student retention" (Hwang 2018, 97).

Student learning and satisfaction highly depend on an instructor's continuing presence in the online classroom (Bowers and Kumar 2015; Poll et al. 2014 in Hwang 2018).

Academic support contributes to maintaining the instructor's presence in the online classroom. The instructor needs to establish rapport by responding within reasonable timeframes to students, using either verbal or non-verbal cues to show concern and interest (Lammers and Gillaspay 2013).

The instructor should be guided by pedagogy and andragogy to support students who possess various learning styles and demographic characteristics. Bawa (2016) states that instructors should also evaluate their own "communication, facilitation, and technological skills" and refine their competencies if needed. Support services should be structured so as to support online students in a similar manner to traditional student support services (Simonson et al. 2015 in Hwang 2018, 13), especially in the post-Covid-19 era.

Twenty-four/seven technological support and irregular tutoring hours are needed to provide the desired (Hwang 2018,13) support to online students (Britto and Rush 2013, Demetriou and Suhmitz-Sciborski 2011, and Nandi et al. 2015 in Hwang 2018, 13). In addition, some students may require more "course management assistance to learn the course layout and understand expectations and assignments." Student support services such as "providing guidance, counselling, assessment and coaching" should be provided in online education (Demetriou and Suhmitz-Sciborski 2011, and Nandi et al. 2015 in Hwang 2018). Findings from a study carried out by Nandi et al. (2015 in Hwang 2018, 13) disclosed that it is important to provide "administrative or technical guidance" at an earlier stage in online courses, emphasising the "instructors' active involvement in facilitating the learning processes" to assist students in making effective use of available resources. Clear and detailed guidelines are also essential to assist learners in customising their online learning.

In supporting individual factors, including teaching, social and cognitive aspects in relation to online learning, the discussion herein is significant. A Community of Inquiry (CoI) framework studies teaching, social and cognitive presences within the online learning context but lacks a developed conceptualisation of "intrinsic, student-level, self-regulated" factors that influence learning (Daspit, Mims, and Zavattaro 2015, 628). As social distancing measures with the Covid-19 pandemic have been around for some time, education institutions are required to thoroughly redesign their services and are called to construct well-designed online learning experiences by developing digital learning methodologies and providing the necessary digital learning contexts, tools and support systems to further advance teaching and learning beyond the pandemic (Krishnamurthy 2020). Several factors are associated with online learning, namely accessibility, affordability, flexibility, learning pedagogy, lifelong learning, and policy. It can be said that an online mode of learning is easily accessible and can even reach out to rural and remote areas with infrastructure and relevant tools. It is considered a moderately cheaper mode of education, given the lower cost of transportation and residence, compared to the overall cost of institution-based learning, but the fundamental core aspect is that of student support (Dhawan 2020, 6).

Given that not all students are digitally confident, due consideration of student support services is critical in fully online environments, where any disruptions/lack of access to technology or support services can present a serious barrier to student engagement in learning. The “four pillars” of supporting student success (Roddy et al. 2017, 5) are often the *intangibles* taken for granted when fully online courses are provided. These pillars include online-friendly academic support (Coonin et al. 2011, and Huwiler 2015 in Roddy et al. 2017, 5); assistance with navigating technology (Lee 2010 in Roddy et al. 2017, 5); health and well-being facilities (Anderson 2008 in Roddy et al. 2017, 5); and a sense of belonging or community of practice (Kumar and Heathcock 2014 in Roddy et al. 2017, 5).

“The instructor’s presence is a key factor in all aspects of online study, especially in intensive online environments, where instructors need to create opportunities for student engagement. Pedagogical approaches need to consider learner competencies, traits and preferred learning styles. This is particularly important in view of demographic differences between online and on-campus cohorts” (Roddy et al. 2017, 7). Additionally, online learning environments should consider potential barriers that could lead to increased attrition, such as perceived isolation, competing for work/family commitments, poor motivation, lack of engagement with content, and technical challenges.¹ The need to identify and rectify such barriers with the:

... regular monitoring of student progress can help to quickly identify and address potential concerns. Providing comprehensive orientation services is key to ensuring students are adequately informed and linked to ongoing support services. Communication plays a pivotal role in enhancing online learning experiences through peer-to-peer and student-to-instructor dialogue. Continuing technical support is also important to address and resolve any technical issues that may arise. Furthermore, the provision of well-being services and the provision of online well-being content such as mindfulness materials are vital toward preventing online student mental health concerns. (Roddy et al. 2017, 8)

In another study conducted amongst 30 students of Mulawarman University in Indonesia, who were interviewed telephonically, research findings illustrate: i) student boredom with online learning after the first two weeks of remote learning from home; ii) considerable anxiety for students from low-income households, because they have to purchase data to be able to participate in online learning; and iii) mood changes due to too many assignments that were considered ineffective by students. The study recommended the involvement of counsellors to assist with the psychological well-being of students (Wahyu, Dwisona, and Lestari 2020, 53).

Consideration of student support services is very important in fully online environments, and where there are any disruptions and lack of access to technology or lack of support services, these can pose significant barriers to student engagement in

1 <https://www.frontiersin.org/articles/10.3389/feduc.2017.00059/full>.

learning. The authors view that these proposed “four pillars” of supporting student success (see figure 1 below) are often the *intangibles* that are taken for granted when providing fully online courses. These pillars include online-friendly academic support (Coonin et al. 2011, and Huwiler 2015 in Roddy 2017); assistance with navigating technology (Lee 2010 in Roddy, 2017); health and well-being facilities (Anderson 2008 in Roddy 2017); and a sense of belongingness or community (Kumar and Heathcock 2014 in Roddy 2017), which are deemed significant typologies for supporting students.

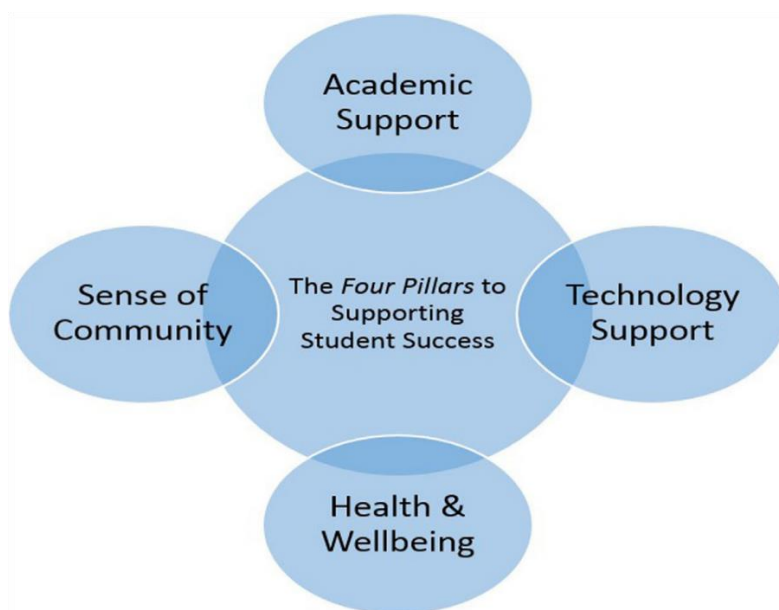


Figure 1: Pillars supporting student success (Roddy et al. 2017, 6)

Student Readiness and Preference for Online Learning

Students enrolling in online courses have diverse levels of readiness and preparedness (e.g., online work skills proficiency, self-directedness), which can potentially impact their success (grades, course completion) (Hung, Chou, and Chen 2010, and Yeh et al. 2019 in Joosten and Cusatis 2020). Forson and Essi (2019) argue that online learning implementation requires expertise, knowledge, physical infrastructure, and psychological readiness. Literature has shown that students’ attitude or positive impression toward e-learning affects their acceptability of online courses (Ansong 2015 in Forson and Essi 2019). The study by Widodo, Wibowo, and Wagiran (2020) concluded that student readiness in online learning can be assessed by “equipment capability, technology skills, self-directed learning, motivation, and perceived usefulness.”

Daspit et al. (2015) reported that measures of individual motivation were found to have a positive influence on student online learning, which has implications for readiness for

online learning. Martin, Stamper, and Flowers (2020) have cited previous studies that identified “self-regulated learning, self-directed learning, locus of control, and academic self-efficacy” as student factors that impact student performance and readiness in online learning.

Hussein et al. (2020), in a study of undergraduate students’ attitudes towards emergency online learning during Covid-19 in the UAE, highlighted major difficulties such as distraction, workload and technology problems, which have implications for student readiness for online learning. Joosten and Cusatis (2020) report online learning efficacy, online work skills, and socialisation as significant predictors of student perceptions of satisfaction and learning, while online learning efficacy is a significant predictor of academic performance.

Student Satisfaction with Online Learning

Dziuban et al. (2015) argue that satisfaction with online learning is gaining prominence in higher education in view of the rapid adoption of this teaching and learning modality in institutions of higher education. The findings of the study conducted by Dziuban et al. (2015) reported “engaged learning” to be an important factor of student satisfaction with online learning, inferring that students expect lecturers to adopt a facilitative role in their teaching. The second-factor, “agency”, characterises students’ satisfaction with recognition of their abilities and accomplishments. The final factor, namely “assessment” (contributing to student satisfaction), determines the degree to which the content-orientated obligations of the course are met.

A study examining student preferences and experience with different course formats conducted by Weldy (2018) reported student preference for and more positive experience in traditional courses. In addition, the results indicated that students viewed podcasts and videos covering content material more effective for learning than threaded discussions or forums. Another study conducted by Hamilton et al. (2020) to assess student preferences associated with the utility of online learning methods such as online platforms, social media, and handheld devices amongst pharmacy students, revealed that 30% preferred a blended course structure (with online and classroom components) throughout the curriculum.

The next part of the paper focuses on the methodological aspects of the empirical study conducted at the University of KwaZulu-Natal (UKZN).

Research Methodology

A case study approach was considered in the methodology through an empirical analysis of defining the attributes associated with students’ experiences regarding online learning in a university environment. Scholarly sense was made of the specific empirical analysis in respect of students’ experiences in online learning at UKZN, with particular reference to psychological readiness and student satisfaction perspective. Yin (2013 in

Wessels, Potgieter, and Naidoo 2021, 9) cautions that in arriving at a sound understanding of a case study, it should not be limited to the case in isolation but should examine the likely interaction between the case and its context.

Study Population

The population for this study included students within the School of Management, Information Technology and Governance (SMIG) in 2020, and who elected modules offered by the SMIG on different campuses. A nuanced statistical analysis is presented on the research that was undertaken with online learning at UKZN. The unit of analysis was a student's perceptions on aspects of psychological readiness for online learning and overall student satisfaction. The justification for choosing the population in the study was that the SMIG is one of the largest schools in UKZN that undertook exclusive online teaching and learning for the first time.

Research Design and Sampling

Framed along a positivist paradigm and deductive reasoning, the study utilised a quantitative methodology that relied on the researchers' objectivity in gathering and analysing the data from the subjects. An explorative research design was used in developing key considerations for determining students' satisfaction in the online learning environment, and ascertaining the extent of psychological readiness of students. Due to the lack of a student list, a non-probability convenience-based purposive sampling technique was employed. Consequently, the results of this study cannot be generalised to the population as a whole. The findings, therefore, and the inferences based thereon, are applicable only to the study sample.

Communication about the research study was placed on UKZN's internal notice system, which requested the participation of students within the SMIG. Those students within the SMIG who consented to participate made up the sample. A sample comprising a complement of 400 students contributed to the study. The sample comprised students between the age group 20–21 years (39.8%), who were primarily female (59%), were mainly in their second year of study (37.3%), and the majority of whom were from the Westville campus (66%).

Data Collection

Data were collected using a structured questionnaire placed on the university's official notice system, and accessed via a link provided to the students. The design of the questionnaire was informed and based on an extensive literature review covering the operationalisation and measurement of the constructs under study. Questions pertaining to the online psychological readiness construct, as well as the overall customer satisfaction construct, were measured using a 5-point Likert scale. Pilot testing of the questionnaire was undertaken with input from academics who possess experience and knowledge in the study area, and through statistical analysis. Ethical clearance was

obtained from UKZN’s research ethics committee prior to the commencement of the data collection.

Students participated in the survey by completing and submitting the questionnaire online. Under the Covid-19 restrictions that were applicable at the time, the online method of collecting data was considered the most feasible. Respondents were offered no incentives to complete the questionnaire, thus keeping the data collection free from any form of bias.

Measurement of Constructs under Study

The key constructs for the study, comprising psychological readiness and overall student satisfaction, were measured by using a 5-point Likert scale, ranging from significant disagreement to significant agreement. There were 17 questions/statements for psychological readiness, and overall student satisfaction was measured by one question/statement on the questionnaire. The measurement score for psychological readiness is depicted in table 1 below.

Table 1: Cronbach’s Alpha scores for the psychological readiness

Construct	Cronbach’s Alpha
Psychological readiness	0.828

According to table 1, Cronbach’s Alpha value for psychological readiness is greater than 0.7, indicating that constructs demonstrate good reliability in the score. For constructs to be reliable, the rule of thumb is that values for Cronbach’s alpha should be higher than 0.7 (Sarstedt et al. 2014 in Larbi-Siaw and Owusu-Agyeman 2017, 464).

Demographic Profile of Participants

The demographic profile of the participants is presented in figure 2. The majority of the respondents (39,8%) were between the age groups 20–21 years, as presented in figure 2. Female students made up the majority of the sample (59%), as shown in figure 3, while second year students comprised the bulk of the sample (37,3%), as seen in figure 4.

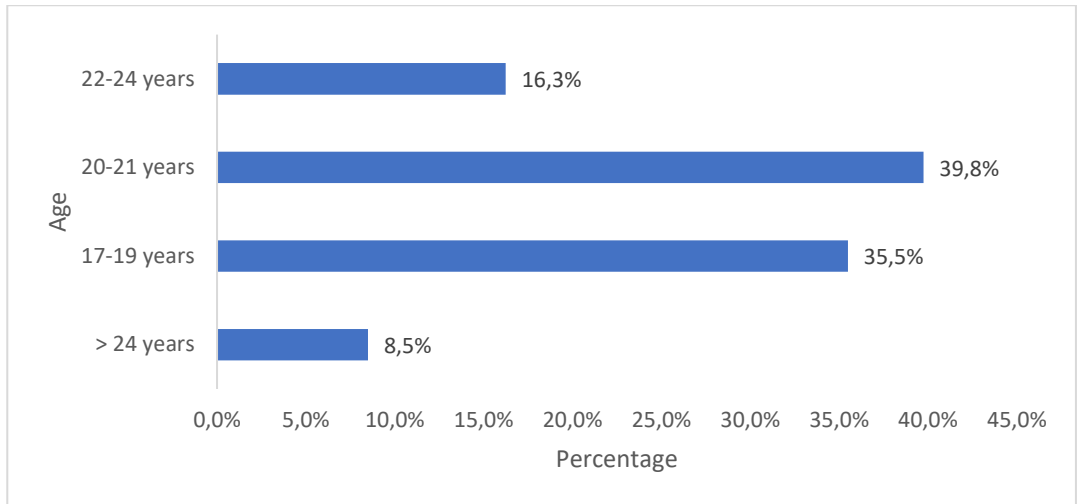


Figure 2: Age breakdown of respondents

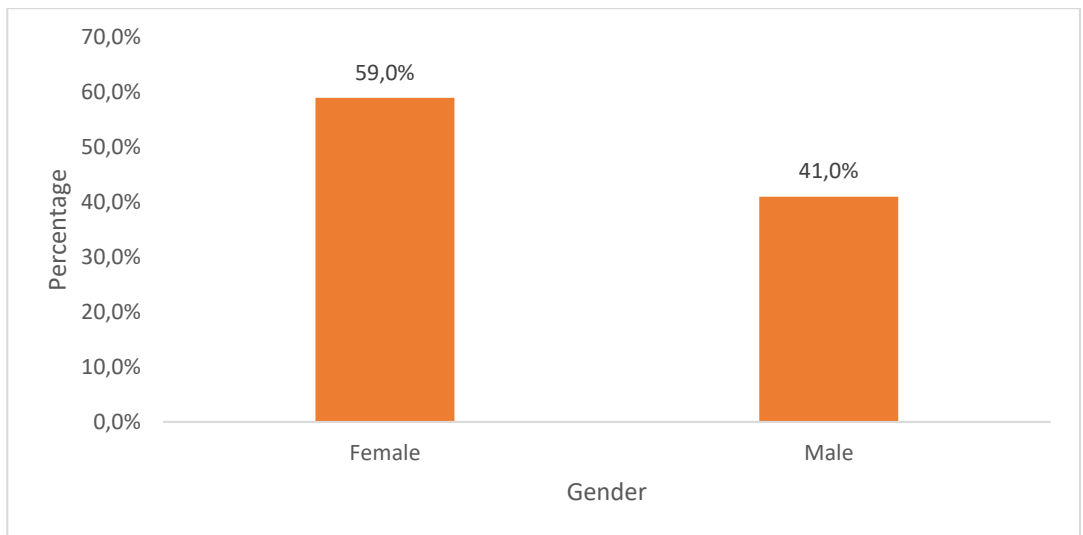


Figure 3: Gender breakdown of respondents

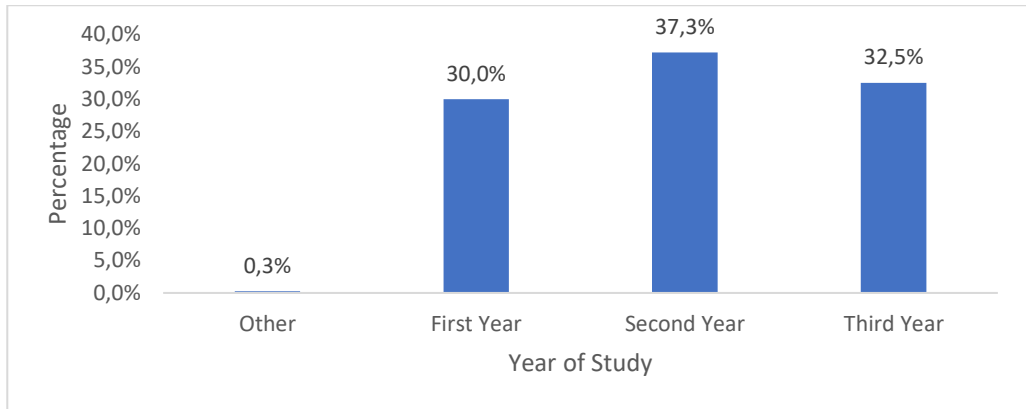


Figure 4: Year of study breakdown

Findings and Analysis

Findings reported hereunder pertain to a quantitative analysis of online learning for the sample in the study. Emphasis on the quantitative aspect focuses on psychological readiness for online learning and gauging student satisfaction. A point of departure focuses on the correlation of both as important constructs in an empirical research study focusing on online learning in the current dispensation of teaching and learning and preparation for the future of learning.

Results on Psychological Readiness for Online Learning

This section describes the findings and analysis of the data obtained from the structured survey administered at UKZN on psychological readiness for online learning and student satisfaction with online learning.

With a specific focus on problem areas that may require support (depicted in table 2), it was found that 18.5% cannot engage effectively with online learning (statement 11.5). In addition, 19.3% of students are not confident using online learning resources (statement 11.4). Moreover, 22% feel that online learning does not allow them to work at their own pace (statement 11.10). Furthermore, 22.8% do not feel confident in expressing themselves using online learning (statement 11.16). In addition, 25.3% do not feel confident in posting questions associated with online learning (statement 11.17), while 28% of respondents seem to be fearful and anxious about online learning (statement 11.3).

Empirical evidence reveals that more support may be required regarding the following issues. Findings reveal that slightly over 30% of respondents have indicated difficulty coping with online learning (statement 11.8). Moreover, statement 11.14 reveals that 36.2% of students do not prefer online learning (statement 11.11). As a matter of concern, a relatively large percentage of respondents (40.4%) seem to have distractions from online learning activities (statement 11.14).

Table 2: Psychological readiness for online learning

Statement	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
11.1. I am unfamiliar with online learning technologies and do not understand how to use them	102	25.6%	156	39.1%	100	25.1%	35	8.8%	6	1.5%
11.2. I need to be trained in the use of online learning technologies	81	20.3%	159	39.8%	91	22.8%	52	13.0%	16	4.0%
11.3. I am fearful and anxious when I have to deal with new online learning technologies	76	19.0%	119	29.8%	94	23.6%	73	18.3%	37	9.3%
11.4. I feel confident in using online tools (email, discussion forums) to communicate with others effectively	25	6.3%	52	13.0%	112	28.1%	134	33.6%	76	19.0%
11.5. I can engage effectively with my lecturers through online learning and remote access	32	8.0%	42	10.5%	115	28.8%	135	33.8%	75	18.8%
11.6. Using Online learning technologies will result in me getting poor grades/marks	88	22.1%	127	31.8%	112	28.1%	39	9.8%	33	8.3%
11.7. I am adequately prepared to conduct online learning for my studies at this University	18	4.5%	42	10.5%	124	31.1%	117	29.3%	98	24.6%
11.8. I can cope with the pace of online teaching and learning	57	14.3%	67	16.8%	102	25.6%	105	26.3%	68	17.0%
11.9. I can engage in self-directed learning	25	6.3%	42	10.5%	122	30.6%	133	33.3%	77	19.3%
11.10. Online learning helps me to work at my own pace in my studies	36	9.0%	52	13.0%	73	18.3%	134	33.6%	104	26.1%
11.11. I prefer online delivery of learning as opposed to face-to-face classroom instruction	70	17.5%	75	18.8%	87	21.8%	69	17.3%	98	24.6%
11.12. Online learning is effective as it allows me to engage with learning materials actively	35	8.8%	43	10.8%	110	27.6%	124	31.1%	87	21.8%

Table 2: Psychological readiness for online learning

Statement	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
	11.13. With online learning, I can direct my own learning progress	30	7.5%	33	8.3%	98	24.6%	139	34.8%	99
11.14. I am not distracted by other online activities when learning online (instant messages, Internet surfing)	61	15.3%	100	25.1%	88	22.1%	92	23.1%	58	14.5%
11.15. Online learning practices tend to be more student-centred than other practices (e.g., face-to-faceteaching)	27	6.8%	43	10.8%	142	35.6%	119	29.8%	68	17.0%
11.16. I feel confident in expressing myself (emotions and humour) through text	40	10.0%	51	12.8%	112	28.1%	109	27.3%	87	21.8%
11.17. I feel confident in posting questions in online discussions	44	11.0%	57	14.3%	109	27.3%	94	23.6%	95	23.8%

The findings show a percentage of students who are fearful and anxious about online learning, which can lead to a low level of motivation, thereby posing a barrier to student success in online learning. The importance of high levels of motivation was confirmed in a study conducted by Daspit et al. (2015, 626), demonstrating the positive influence of individual motivation on student learning within the context of an online course.

Results on Overall Student Satisfaction

Findings pertaining to overall student satisfaction in table 3 reveal that less than half (46.9%) of the students are satisfied with online learning. Increased support may thus be required to increase student satisfaction with online learning.

Table 3: Overall student satisfaction

Statement	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
13.1. Overall, I am satisfied with online learning at UKZN	46	11.5%	53	13.3%	113	28.3%	106	26.6%	81	20.3%	399	100.0%

Regarding students' satisfaction in a technology-mediated learning environment, Liaw (2008 in Larbi-Siaw et al. 2017, 458) shows that students' satisfaction is driven by factors such as environmental characteristics, e-learning effectiveness, and instructional methods that are also dependent on learning theories such as experiential, constructivist and transformational learning.

Relationship between Online Psychological Readiness and Student Satisfaction

Based on Spearman correlations at a 99% confidence level between overall student satisfaction and psychological readiness for online learning variables, as depicted in table 4 below, correlation coefficients above 0.5 are reported. Inferences that are drawn, based on the correlation coefficients in table 4 below, in order of importance, were that overall student satisfaction with online learning would be higher if more support is provided in several areas, as explored in the research.

Table 4: Correlations between online psychological readiness and student satisfaction

Correlations between online student psychological readiness and overall student satisfaction	Correlation Coefficient
11.8. I can cope with the pace of online teaching and learning	0.656
11.12. Online learning is effective as it allows me to engage with learning material actively	0.645
11.10. Online learning helps me to work at my own pace in my studies	0.628
11.13. With online learning, I can direct my own learning progress	0.595
11.5. I can engage effectively with my lecturers through online learning and remote access	0.565
11.7. I can adequately prepare to conduct online learning for my studies at this University	0.563
11.11. I prefer online delivery of learning as opposed to face-to-face classroom instruction	0.537
11.9. I can engage in self-directed learning	0.53
11.14. I am not distracted by other online activities when learning online (instant messages, internet surfing)	0.511

Inferences that are drawn, based on the correlation coefficients in table 4, will ensure overall student satisfaction with online learning as higher if more support is provided in the following areas:

- Helping students to cope with online learning (supported by a study conducted by Pariat et al. 2014 and Pierceall and Keim 2007 in Cao et al. 2021, 3).
- Helping students to engage better with online learning resources (supported by the notion of Nudge Theory encouraging student engagement, by Brown et al. 2022, 2).
- Assisting students to work at their own pace (supported by the research of Taulauleli et al. 2021).
- Helping students direct their own learning progress (supported by Dowell and Small 2011).
- Preparing students adequately to conduct online learning (supported by research conducted by Francescucci, Kellershohn, and Pyle 2021).
- Using interventions to help students develop a preference for online learning (supported by policy interventions for online learning by Singh et al. 2022).
- Using interventions to prevent distractions with online learning (supported by Neuwirth 2020).

The findings reveal that both virtual and augmented reality need to be applied for learning and coping skills in online learning amongst students. The bundle of learning modes with both online and offline choice, popularly known as blended learning, could be considered for the future. Institutions of higher learning are compelled to focus on techniques and delivery of online learning, implementing curriculum changes suitable to online with an increased focus on ICT technologies into curriculums and pedagogies so that the necessary support systems are in place for students (Rao and Vijayalakshmi 2021, 16).

Discussion

The effects of the pandemic on the students are documented in the research that was undertaken to gauge the impact on their well-being and the support that is needed in the post-Covid-19 environment. The student participants' responses regarding online learning and statistical significance are discussed hereunder. The responses would be useful for understanding the mind-set of the present generation of students and the teaching and learning context in higher education going forward.

Though the uptake in this study revealed a more positive trajectory with online learning amongst students, the digital platform is supplementary but not the ultimate game-changer in higher education. The study was conducted after a sudden disruption in teaching and learning, and curricular activities took place on account of the Covid-19 pandemic. What is significant, though, is that the necessary infrastructure for online learning must be firmly in place in the new normal teaching and learning environment. This seismic shift in the mode of learning calls for a series of turnaround strategies to address several aspects, including the urban and rural readiness with connectivity and

availability of devices with the students, which is something that must be explored further in future research (Rao and Vijayalakshmi 2021, 16). The authors of the research study further elucidate that, given that students (to an extent) control their learning in an online mode, it stands to reason all the more that institutions of higher learning must be flexible in their design and delivery, enabling robust and sustained student support to address some of the concerns expressed in this study.

Limitations

The limitation of this study is that it was centred on the School of Management, IT and Governance undergraduate students in the College of Law and Management Studies, UKZN. The concentration of this sample may not be generalisable to the larger population of students, and a more expansive empirical study is envisaged to gauge a more comprehensive response.

Recommendations

Changes in the delivery mechanism of teaching and learning due to the pandemic and beyond are to be examined as the learning of skills and their application in an online mode are pre-requisites to the success of online education (Rao and Vijayalakshmi 2021, 2). Equally important are the support and mentoring initiatives to climatise students to this mode of teaching and learning.

Given the prevalence of online teaching and learning in higher education currently on the rise, the effectiveness of online learning environments is an area of significance and must factor in a multiplicity of aspects as raised in this research study outcomes, amongst others. Consequently, understanding its impact on students is an expansive challenge and must be given careful consideration. The results of the study support the notion that students equally desire interaction and support in online settings, and that well-designed online courses are capable of providing sufficiently engaged and mentored support in this mode of the learning environment in the post-Covid-19 era. While institutions of higher learning and instructors have no control over Covid-19's educational disruption, they can control the perceived outcomes given to students (Rippé et al. 2021, 272).

Some of the pertinent recommendations in a post-pandemic era, as a derivative of embedding the research, are to make the best out of changing old modalities and to consider the following aspects:

- Digital equity and the digital divide are significant aspects for due consideration, as not all students have access to technology for seamless online learning.
- Curricula can be presented in various formats, but should ideally be followed up with chats and synchronous meetings for the immediacy of feedback and to strengthen a personal connection with students. Frequent communication between

student-instructor and student-student decreases feelings of isolation (Hwang 2018).

- Higher education institutions must build resilience strategies into teaching and learning systems to ensure more tangible and sustainable outcomes.
- Usability and accessibility must be key principles to successful online teaching and learning.
- Developing collaborative student support systems for sustainable online learning.
- Adopting a bottom-up approach to customise teaching and learning in higher education as students take ownership of learning, informing what works best.
- Creating a community of practice creates vibrant platforms of evolved learning in the new normal era.

Conclusion

The study investigated students' experiences with online classes due to the disruption caused in the classroom mode of learning during the Covid-19 pandemic, emphasising student support. The study highlights practical knowledge gaps deemed relevant for strengthening online learning, and gives due consideration to steadfast student support to ensure sustained success and achievement of outcomes.

The authors believe that efforts to assess the effectiveness of students' online learning in a post-Covid-19 era warrant investigating the impact of the delivery modality on student engagement. There is a need to conduct similar studies at other universities and compare and contrast lessons learnt to improve and enhance students' teaching and learning experiences in higher education. The effectiveness of learning is determined by a range of aspects, including flexibility, dynamism of teaching strategies, pedagogies, and active student engagement. Equally important are the extent of student readiness, level of student satisfaction, psychological readiness, and the provision of steadfast support to students in the post-Covid-19 era, as highlighted in the research. Finally, the authors posit that these two aforementioned constructs, amongst others, are antecedents to the efficacy of online teaching and learning in higher education.

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