International Journal of Development and Sustainability
ISSN: 2186-8662 – www.isdsnet.com/ijds
Volume 14 Number 7 (2025): Pages 434-458
https://doi.org/10.63212/IJDS25012401

Transforming quality education through e-learning system in a selected South African higher institution

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Abstract

Technology and its instruments significantly impacted higher education during Covid-19 and are poised to persist. This cannot be overlooked, as the expansion of ICTs is accelerating. The emergence of e-learning has created boundless educational options, enhancing the educational landscape by expediting learning outcomes. The digital native is passionate about the shift from conventional teaching approaches to the integration of digital resources in improving education. This project aims to investigate the impact of e-learning platforms on the provision of excellent education during the pandemic at the University of Johannesburg (UJ). A quantitative survey questionnaire was administered to students at UJ over their 1st, 2nd, 3rd, 4th, and 5th years. The research indicated that the e-learning system not only improves accessibility but also cultivates a more engaging, adaptable, and individualised learning experience for pupils.

Keywords: Quality Education; E-Learning; University of Johannesburg (UJ); South Africa (SA); Higher Education Institutions (Heis)

Cite this article as: Ramakgolo, M.A. (2025), "Transforming quality education through e-learning system in a selected South African higher institution", *International Journal of Development and Sustainability*, Vol. 14 No. 7, pp. 434-458.

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1. Introduction

Reducing digital divide to guarantee fair access to quality education among students has become a pivotal topic in contemporary educational discourse. This is in light of the swift progress of digital technologies and the necessity for adaptive learning environments. Quality education is a cornerstone of modern society, influencing economic growth, social equity, and individual empowerment. The multifaceted nature of education quality encompasses not only the curriculum and instruction methods but also the broader socio-economic context in which education operates. Quality education equips individuals with the knowledge and skills necessary to thrive in a competitive global economy. It is pivotal in overcoming poverty and reducing income inequality, as it cultivates the skills and values essential for success in an increasingly complex world (Rauch, 2022; Demina et al., 2020). According to Demina et al. (2020), the connection between quality of education and economic performance underscores the necessity for continuous improvement in educational standards.

Quality education promotes social justice and equity. Thus, it is imperative to recognise and accommodate diverse learning needs within educational systems (Chelnokova et al., 2019). Current educational landscape is increasingly influenced by market-oriented perspectives, which can exacerbate inequalities if not addressed through equitable policies (Molla and Phạm, 2019). By integrating modern technologies into education is another critical aspect of enhancing quality. Incorporation of technological advancements can ensure the reliability and effectiveness of educational programs (Al-Momani, 2023). This sentiment is echoed by Kumar and Dinesh (2019), who argue that information and communication technology (ICT) can significantly improve teaching quality and accessibility, thereby addressing issues of equity and management within higher education (Kumar and Dinesh, 2019). E-learning systems have demonstrated significant potential in enhancing educational outcomes. Studies indicate that e-learning can substantially improve students' learning performance and engagement. For instance, Annalakshmi (2024) highlights that e-learning significantly improves students' learning performance and addresses modern educational challenges, ensuring accessibility and improving the general calibre of the learning process (Annalakshmi, 2024). Furthermore, the flexibility afforded by e-learning platforms allows for the customisation of learning experiences, catering to the unique needs of individual learners and fostering an inclusive educational environment (Mystakidis et al., 2019).

The central focus of the research is: how e-learning platforms influenced the delivery of quality education during the pandemic at UJ? In order to attain its objective and address the research query, the study is structured into nine main sections. The first part introduced the research topic, while the second part discusses the theoretical foundation. The research is based on the conceptual framework discussed in the third section. The literature review makes up the forth component. This part explores quality education in HEIs. The section also examines the role of e-learning for improving quality education. The research methodology is explained the fifth section. The findings of the study are presented separately in section six. While the interpretation of the results is discussed in the next section. The eight section provides the study conclusion. The last part of the paper discusses the study's limitations.

2. Theoretical framework

As a philosophy of learning, constructivism holds that students actively create knowledge through their experiences and interactions with the outside world. This philosophy has significant implications for

improving e-learning and providing quality learning, particularly in the context of rapidly evolving technologies (Berestova et al., 2022). The integration of constructivist principles into electronic-learning environments fosters active engagement, collaboration, and personalised experiences of learning, which are crucial for enhancing educational outcomes (Zhang et al., 2020). One of the core tenets of constructivism is that students build their own knowledge and comprehension of the world by having experiences and thinking back on them. In e-learning, this can be facilitated through interactive technologies that allow students to engage with content actively. Constructivist educational technologies can turn online spaces into productive classrooms where students can engage in collaborative and creative knowledge construction (Yakar et al., 2020). This aligns with findings by Alalwan et al. (2019), who emphasize the role of web-based applications in promoting social participation and collaborative learning, which are essential for academic success in higher education (Alalwan et al., 2019).

Moreover, applying constructivist pedagogy in electronic-learning can significantly enhance student-teacher interactions and foster a more personalized learning experience. Berestova et al. (2022), argue that constructivist approaches in electronic-learning address the challenges of student engagement and interaction, thereby promoting a student-centred environment for learning (Berestova et al., 2022). The use of technology in constructivist learning environments also supports diverse learning styles and paces, which is particularly important in electronic-learning contexts. On the other, the challenges teachers face when implementing constructivist principles in technology-rich classrooms, suggesting that a deeper understanding of these technologies can help overcome barriers to effective teaching (Nguyen, 2024).

The application of constructivism in e-learning enhances quality education and promotes independent learning and critical thinking. Harahap et al. (2019) argue that constructivism necessitates student involvement in the learning process, where learners are encouraged to develop their knowledge through inquiry and exploration (Harahap et al., 2019). This supported by the finding that the integration of technology in education, particularly through e-learning, has expanded opportunities for learners to engage in a constructivist manner, thus fostering social empowerment and sustainable employment (Singh et al., 2022). The emphasis on learner autonomy and the ability to construct knowledge through interaction is essential for creating effective quality electronic-learning settings.

Furthermore, the role of technology in supporting constructivist learning cannot be overstated. The utilisation of digital tools allows for the formation of quality education (Alenezi, 2019). Moreover, the effectiveness of constructivist approaches in e-learning is supported by empirical evidence. Studies have shown that learners who engage in constructivist learning environments tend to perform better academically and exhibit higher levels of motivation and engagement (Faridi, 2024). Research indicates that students who perceive a positive relationship between e-learning, self-regulation, and constructivist principles demonstrate improved attitudes towards their learning experiences (Faridi, 2024). This suggests that the alignment of electronic-learning practices with constructivist principles can lead to enhanced educational outcomes.

The challenges associated with implementing constructivist approaches in e-learning must also be acknowledged. While constructivism promotes active learning, there are often barriers to effective interaction and collaboration in online environments (Kibuku et al., 2020). These challenges necessitate the development of strategies that facilitate meaningful engagement among learners, ensuring that the potential of constructivism is fully realised in e-learning contexts. This includes providing adequate support and resources for both learners and educators to navigate the complexities of online learning.

3. Conceptual framework

This article utilised the proposed quality education paradigm created by Saleem et al. (2022) based on a combination of existing literature and the researcher's comprehension of the research problem when conducing the study. Respondents were provided with a survey, which some of the questions were framed around the variables provided in the diagram such as the supported provided to them by the institution, how situational factors affected them and the motivation behind them finding e-learning as an effective tool for learning.

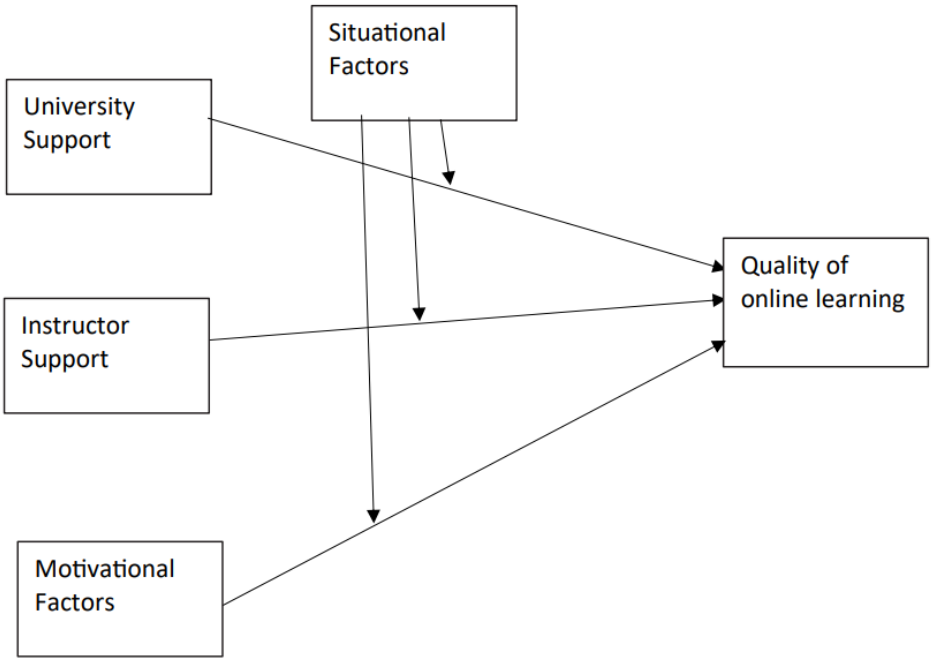

Figure 1. Proposed model for quality education

Figure 1 illustrates the quality education framework with four elements that enhance excellent teaching and learning, as articulated by Saleem, AlNasrallah, Malik, and Rehman in 2022. These elements may influence the potential for high-quality instruction and learning.

3.1. University support

Moore and Kearsley (2005) argued that offering guidance and counselling services to students on campus is an integral aspect of university support. E-learning orientations, administrative assistance, and interpersonal communication with the participant (Saleem et al., 2022, p. 3). Selim (2007) additionally incorporated computer laboratories, a support desk, library services, and institutional support facilities. The university's primary responsibility is to enhance the methodologies utilised and offer a reliable means of educational delivery. Consequently, faculty members must possess the requisite knowledge, skills, and abilities to deliver quality training (Saleem et al., 2022, p. 3). Providing students with enough support is essential for them to

achieve their educational objectives and ambitions. Moisey and Hughes (2008) asserted that it is imperative for colleges to provide students with a conducive learning environment.

3.2. Instructor-related support

Nortvig et al. (2018, p. 5) assert that the calibre of e-learning is significantly affected by faculty members. Educators are the facilitators of high-quality education. They significantly contribute to enhancing students' academic performance and reducing academic dishonesty (Nortvig et al., 2018, p. 52). Pittenger and Doering (2010) note that faculty members significantly influence the dropout rates of online courses, particularly when they see e-learning negatively (Shieh, 2009).

3.3. Situational factors

Situational factors encompass elements such as practical training, the dynamics of student-teacher interactions, perceptions of time, and the experience of being overwhelmed by academic responsibilities (Saleem et al., 2022, p. 4). Students are susceptible to technical conflicts that may induce stress and thus diminish the quality of e-learning. Similarly, an individual's confidence is undermined and their potential for advancement is constrained by insufficient practical teaching. Students with communication difficulties are prone to challenges in comprehending instructions, accurately interpreting language, and successfully conveying their meanings, as noted by Lolli (2013). The aforementioned indicates that situational factors adversely influence the favourable relationships among instructor support, university support, motivational variables, and the quality of teaching and learning Saleem et al. (2022, p. 4).

3.4. Motivational factors

Certain elements promote a positive opinion of the online learning environment among students. The components provided the learner with the advantages, significance, and worth of academic assignments. Motivation is a crucial element in education; pupils must be motivated to enhance their learning capabilities. Incentives such as academic accolades, elevated grades, and other forms of acknowledgement may be associated with this aspiration (Lim and Kim, 2003). Aviv (2004) asserts that a student's motivation and individual circumstances are the primary motivators for engaging in an online environment. Similarly, substantial driving factors in education have been identified, including self-regulation, opportunities for collaborative learning, goal achievement, self-efficacy, time management, and learner autonomy (Paechter et al., 2010).

4. Literature review

Conceptualisation of quality education is provided first in the context of the study. The literature review seeks to examine the quality education that is inclusive of teaching and learning at the university. Also reviewing the role played by e-learning system in improving quality education. The review focuses on these themes subsequently.

Table 1. Conceptualisation of quality education

Scholars	Literature Observation and Definition
Budiharso and Tarman (2020)	There are several definitions of quality in literature. Quality is defined by an online dictionary as a means of comparing any property's goods or services. According to a contemporary definition, quality results from "meeting or exceeding customer expectation" and is derived from suitability for intended use.
Chand (2024)	Quality education is a multifaceted concept that encompasses various dimensions, including the efficiency of instructional strategies, the applicability of curricula, the credentials of teachers, and the general atmosphere of the classroom. Although different contexts have different ideas about what constitutes great education, in general, it seeks to satisfy the requirements of students and society at large while guaranteeing long-term growth and personal development.
Thangeda et al. (2016)	Scholars indicate that for any country to have a sustainable economy, high-quality education is essential. The ability to be maintained, preserved, supported, or validated in order to preserve a particular state or position is known as sustainability. The term "necessity" describes an essential need or demand. Global economic activity trends indicate that in order to prevent an economy from collapsing, new strategies, tactics, and solutions to potential crises are essential. The creation of recently established IT programs that enable manufacturing in any economy and the employment of auto machines in factories is a result of the compelled adoption of these technologies by governments globally.
Patfield et al. (2022)	One of the key components of quality education is the assurance of high standards in teaching and learning processes. This includes the qualifications and continuous professional development of educators, as well as the relevance and rigor of the curriculum offered. quality education requires qualified teachers, effective research, and a well-structured curriculum, all of which contribute to the intellectual capital necessary for educational success.
Skedsmo and Huber (2020)	Quality education is a commitment to inclusivity and responsiveness to diverse student needs. Scholars indicate the significance of culturally responsive assessment practices in enhancing educational quality, suggesting that such approaches can lead to better educational outcomes for a varied student body. This aligns with the broader understanding that quality education must cater to the varied backgrounds and

	aspirations of students, ensuring equitable access to learning opportunities.
Vaganova et al. (2020) Sampul et al. (2020) Hafeez et al. (2022)	Quality education involves managing educational activities effectively to satisfy the demands of students and other interested parties, indicating that a methodical approach to quality control is essential in universities. According to scholars, implementing quality assurance procedures is what constitutes high-quality education. Since quality assurance in education entails methodical procedures and corrective actions meant to improve educational quality, it is crucial for achieving improved educational results. the significance of quality metrics designed especially for online learning settings, particularly in the wake of the COVID-19 epidemic, which made the transition from traditional to online education necessary. Maintaining educational standards at higher education institutions depends on the identification and use of these indicators.

(Source: construct by Author)

4.1. Quality education in Higher Education Institutions (HEIs)

Brainard (2021, p. 95) asserts that the primary objective of education is to cultivate capable and innovative individuals who will be beneficial to society; individuals who will enhance the physical, intellectual, and aesthetic growth of the nation; individuals who will possess awareness of their social, economic, and cultural contexts, and who will adapt with self-assurance to a perpetually evolving environment (Brainard, 2021, p. 95). Education ensures the development of information and skills that enhances individual productivity and improves lifestyles. Access to quality education is essential due to its capacity to alleviate poverty, improve individual and collective well-being, and strengthen societal cohesion. Education is essential for the development of individuals and society (UNESCO, 2016, p. 10). The COVID-19 pandemic affected the whole educational system. Instruction and education persisted online to guarantee the maintenance of quality education; this involved the delivery of teaching and learning both synchronously and asynchronously through internet technologies.

These techniques facilitate student engagement with teachers and classmates while maintaining social distance (Dong et al., 2020). Analogous to conventional education, provides students the opportunity to acquire knowledge, articulate their viewpoints, interact with peers, exercise autonomy, and regulate their time (Azzi et al., 2021; Hwang et al., 2021). Both the lecturer and the student must possess the ability to utilise technology to promote and maintain healthy social interactions to effectively implement this teaching and learning technique (Andel et al., 2020).

Besides technological proficiency, essential factors for e-learning encompass the accessibility of suitable facilities, motivation, institutional backing, infrastructure, and the financial circumstances of students (Rusli et al., 2020; Laksana, 2021). Consequently, it is imperative to assess the quality of e-learning in this article. Notwithstanding its numerous benefits, the effectiveness and efficiency of e-learning are affected by various challenges and determinants (Pratiwi, 2020). These barriers and problems may encompass socio-economic

factors, load shedding, technical illiteracy stemming from insufficient prior exposure to technology in secondary education, lack of desire, student readiness, institutional support, and the role of educators. The quality of education in higher education institutions (HEIs) in South Africa is a complex topic shaped by historical, socio-economic, and policy-related issues.

The legacy of apartheid has significantly impacted the education system, resulting in gaps in access and achievement across various demographic groups. This has led to a higher education landscape marked by inconsistent quality and outcomes, which persistently undermines the nation's educational objectives. The concept of student success, as articulated by the Council on Higher Education (CHE), refers to the improvement of student learning aimed at augmenting the number of graduates possessing attributes that are personally, professionally, and socially advantageous, constituting a critical element of quality in higher education (Sondlo and Herman, 2020). South Africa experiences consistently poor throughput rates, with around 58.1% of students not completing their university education (Tandlich et al., 2018). Additional details regarding the throughput rate at various higher education institutions can be located in the 2021 South African peer data (Marwala and Mpedi, 2022). University of Johannesburg (UJ) figures indicate that in 2019, the undergraduate model success rate was 85.8%, while the minimal time necessary for degree completion was 44.6% (Marwala and Mpedi, 2022). Although elevated compared to previous years, the success rate reflects a bleak portrayal of the national throughput rate. 10.7% of undergraduate students discontinued their education in the year they commenced their second year of study. The output of postgraduate programs has almost doubled from 2017 to 2021 (Marwala and Mpedi, 2022).

This concerning figure underscores the urgent need for initiatives aimed at improving student engagement and retention, as studies demonstrate that student involvement is essential for academic achievement. The COVID-19 pandemic intensified these issues, compelling institutions to swiftly shift to online learning, which, although essential, prompted concerns regarding the quality of education provided at this time (Ngoatle, Maputle and Ngoepe, 2022; Mhlanga and Moloi, 2020). Kearsley (2000, p. 105) asserts that high-quality e-learning must exhibit ten fundamental attributes: information, teaching, encouragement, feedback, organisation and coordination, usability, support, workload, and adaptability.

Research evaluating the efficacy of e-learning from the student's viewpoint seems to be insufficient. Little is known about the quality of programs available online. Educators, administrators, and policymakers must recognise how their "clients" evaluate the quality of online courses via the lens of their own educational experiences. Moore and Kearsley (2005) assert that the university provides help through the availability of guidance and counselling services for its students. The components included include orientations to online learning, administrative support, and participant social engagement. The university's aid is categorised into two types: course support and institutional support (Lee et al., 2011). Assistance sought by students about entrance, registration, scholarships, research, and academic issues is termed institutional help. Furthermore, Selim (2007) contends that institutional support includes computer laboratories, library services, assistance desks, and amenities.

In the course support section, students pose enquiries regarding the course materials, assignments, activities, and assessments. Chang, Chen, Lin, and Sung (2008) assert that providing support to students during the learning process is essential for enhancing their entire educational experience. Woo and Reeves (2007, p. 20) assert that universities must adopt the following educational standards:

- Assign students authentic, real-world tasks;

- Facilitate collaborative opportunities among educators, professionals, and peers;
- Engage students in the formulation, execution, and negotiation of perspectives concerning these tasks;
- Employ collaboration, discourse, and critical analysis to enhance and complete the assignments;
- Ensure that students can consult with instructors, resources, and each other to clarify misconceptions and refine ideas. A meaningful engagement method is essential for enhanced learning Woo and Reeves (2007, p. 20).

In recent years, the South African government has implemented many technological initiatives and programs designed to equip schools and prepare educators and students for a technology-enhanced learning environment (South African Government, 2016). These initiatives seek to furnish learners with the competencies necessary for the digital workforce. Diverse initiatives have aimed to provide technological infrastructure, material, and associated skills to enhance teaching and learning in educational institutions, as well as to facilitate decision-making processes (Ostrowick, 2018). Reports indicate that additional provincial and district initiatives have been implemented to develop an e-portal for educators and learners (Parliamentary Monitoring Group, 2020), while others have adopted data-driven decision-support systems to improve decision-making processes (National Department of Basic Education, 2020). Nevertheless, educators and learners have not completely embraced these advancements due to a multitude of causes, including socio-economic and user-related obstacles. Numerous studies indicate the necessity of implementing thorough co-design technology methodologies (Chemisto et al., 2016) and associated adoption procedures, alongside providing adequate training prior to deployment.

4.2. The Role of e-learning for improving quality education

This section emphasises the increasing significance of e-learning systems in delivering quality education.

Numerous researchers have examined the function of the e-learning system. The literature emphasises that e-learning has enhanced learning and production. Researchers assert that e-learning has enhanced the acquisition of knowledge and the comprehension of abilities. Students and instructors can enhance teamwork and communication via digital technology and collaborate to address educational difficulties through online platforms. Productivity, flexibility, and autonomous learning have been enhanced (Encarnacion et al., 2019). Researchers assert that e-learning has profoundly revolutionised innovative learning methodologies via online platforms. E-learning can markedly improve educational quality by providing flexible learning alternatives, tailored experiences, and access to an extensive array of resources. It can enhance student engagement, retention rates, and learning outcomes (Encarnacion et al., 2019).

E-learning is progressively expanding and has integrated into university education. Universities create diverse courses to meet student learning requirements and enhance employee performance (Naresh and Reddy, 2015). Research on e-learning deployment demonstrates that it facilitates not only the delivery of course content and materials but also enhances student academic performance (Islam, 2016). E-learning actively involves students in the educational process, offering chances for online activities that may be undertaken at their own pace and at a time that suits them. It generates learning environments and holds learners accountable for their own education. Furthermore, e-learning enhances learners' time-management abilities, facilitates the coordination of their study schedules, and provides the option to bypass unnecessary elements (Songkram et al., 2015). Contemporary educational technologies and e-learning systems prioritise student engagement and emphasise the enhancement of individual student resources.

5. Methodology

This study uses a quantitative approach, which is supported by its methodological soundness, hypothesis testing capabilities, and ability to offer a framework for understanding connections between variables using statistical techniques. Sample size is determined by its application of power analysis, which guarantees adequate data collection to detect significant effects. Although qualitative approaches provide insightful information, they lack the statistical capability to make population-level generalisations. Furthermore, mixed-methods research can offer a comprehensive viewpoint by incorporating qualitative concepts, it was not taken into consideration for this study because of the challenges it presents, especially with regard to data integration and methodological rigour.

Data was collected using a survey. The survey consisted of 13 questions, with the first section designed to collect demographic information from the participants. This approach was chosen to investigate first-year students' perceptions of their e-learning experience during the pandemic and to provide insights into the challenges and benefits of e-learning in this context. The research was based on a Positivist standpoint. The researcher first recorded the enrolment of first-year students in 2020, which amounted to 834. Acquired the statistics from the Faculty of Business and Economics.

Approximately 540 copies were manufactured and distributed to the students. Based on enrolment rates, a sample of 30% of the population was gathered. In order to ensure that the sample size was both reasonable and statistically sound, the decision was made based on the necessity of representative sampling and statistical power analysis. The study ensures that its findings are reliable and applicable to a wider population by choosing a suitable sample size. Two surveys were created for the research project. The preliminary poll was administered through Google form to evaluate the study. The researcher disseminated the revised version to the pupils after rectifying faults. The student survey was designed to collect data on multiple facets of their lives, encompassing their economic status, demographic information, perspectives on traditional versus online learning environments, and their reactions to the pandemic-induced changes

Given the characteristics of the target group, Statistical Package for the Social Sciences was used to analyse the data, and descriptive statistics were used to make the data comprehensible. Without using complex inferential analyses, descriptive statistics were utilised to convey the essential features of the data, such as measures of central tendency. To identify patterns and correlations, it involved quantifying variables and analysing their interrelationships. Researchers can employ linear data collection and processing approaches to yield statistical data. The core tenets of quantitative research are objectivity, neutrality, and the acquisition of extensive knowledge, exemplified by a statistical summary derived from a substantial sample size. The study's justified application of a quantitative research methodology, through the collection of numerical data from multiple participants and its subsequent analysis through a descriptive-statistical technique, yielded descriptions of the phenomena under investigation. This study employed a descriptive research approach to elucidate the experiences of students who engaged with e-learning throughout the epidemic.

The study complied with the ethical guidelines set forth by UJ, guaranteeing that participants received information about their voluntary participation and their right to withdraw from the study at any moment. Before participants filled out the questionnaires, they signed a letter of informed consent that included with the surveys. Lastly, the responses were anonymised, participant identities were eliminated, and the completed

questionnaires were not published in order to protect participant anonymity. The results from the study were presented using only the pertinent meaning units.

6. Results

The study findings suggest that students generally prefer face-to-face learning methods; however, e-learning remains valuable due to its flexibility, enabling individuals to study from home and enhancing time management skills. The study posits that online learning during COVID-19 fosters self-directed learning and facilitates interaction, allowing for increased flexibility in learning schedules while promoting student engagement and improving academic success. Nevertheless, the study revealed that despite the advantages of e-learning, it cannot be disregarded that it is not as successful as traditional learning methods. E-learning necessitates enhancement in the delivery of course content to students, as this is vital for effective teaching and learning.

The shift from traditional teaching and learning to e-learning is unattainable without the collaboration of stakeholders to attain the singular objective of quality education. Collaboration can amalgamate the distinct strengths of individuals or teams to yield consistent outcomes; this necessitates the commitment of all participants. To achieve outstanding teaching and learning, students, the institution, and teachers must collaborate effectively. The study examined the factors affecting the quality of teaching and learning during the pandemic. As previously stated, all individuals share the responsibility for guaranteeing great teaching and learning; hence, none of the elements identified in the study can be considered in isolation. All these aspects are interconnected to guarantee that both students and the institution, encompassing academic staff and faculty, provide and engage in quality learning and teaching.

The study's results indicate a correlation between university support, faculty involvement, and the driving factors influencing the quality of students' online education. Moreover, the study revealed that situational circumstances may significantly diminish the association between instructor support, university support, and motivational factors in achieving e-learning quality. Situational aspects are adverse, encompassing practical instruction, student interactions, student-lecturer interactions, challenges, and more. In the absence of practical training, pupils are prone to errors and inefficiencies. The e-learning experience is disrupted when students have limited or no access to technology for learning. It is essential to acknowledge that pupils encounter challenges and situational factors. The study concludes that institutional support continues to positively influence the ability to traverse several aspects essential for receiving quality education. Institutions typically provide guidance and tutorials to all students; however, the scope and efficacy of these resources are not examined here. This initiative aims to facilitate accelerated learning by instructing students on the utilisation of learning management systems.

The organisation educates students on utilising various learning tools offered by the learning management system (e.g., Blackboard), including accessing available resources, viewing recorded lectures, submitting assignments and examinations, and conducting searches for results, among others. Another finding from the study is the significance of instructor support in the e-learning environment. The enhancement of students' learning is facilitated by lecturers' willingness to assist them with technology-related challenges. Furthermore, the connection between lecturers and students provides opportunities for enquiries, affords greater flexibility in assignment submissions, and delivers timely feedback on assessments. Thus, this improves the quality of

online education. The study found a positive association between the quality of online learning and the motivational factors. These aspects have the capacity to significantly motivate students to provide a positive assessment of the online learning environment.

A deficiency in practical experience may dissuade students from engaging in online courses, thereby diminishing the quality of instruction. Additional challenges such as inadequate internet connectivity, high data costs, and computer illiteracy impeded sustained engagement. The students' intermittent inability to manage their workload further impeded learning, leading to wasted time. 200 respondents reported receiving assistance from the Department of PMG throughout their transition from in-person to online learning. The results demonstrate that students' well-being and educational quality deteriorate when they perceive a lack of belonging in their learning environment. The obstacles of e-learning for students are intensified by technological disruptions, which often impede their ability to comprehend new concepts and effectively achieve their educational objectives. Finally, the study's discourse on culture illustrates how diverse cultural backgrounds can influence e-learning adoption. See the figure 2:

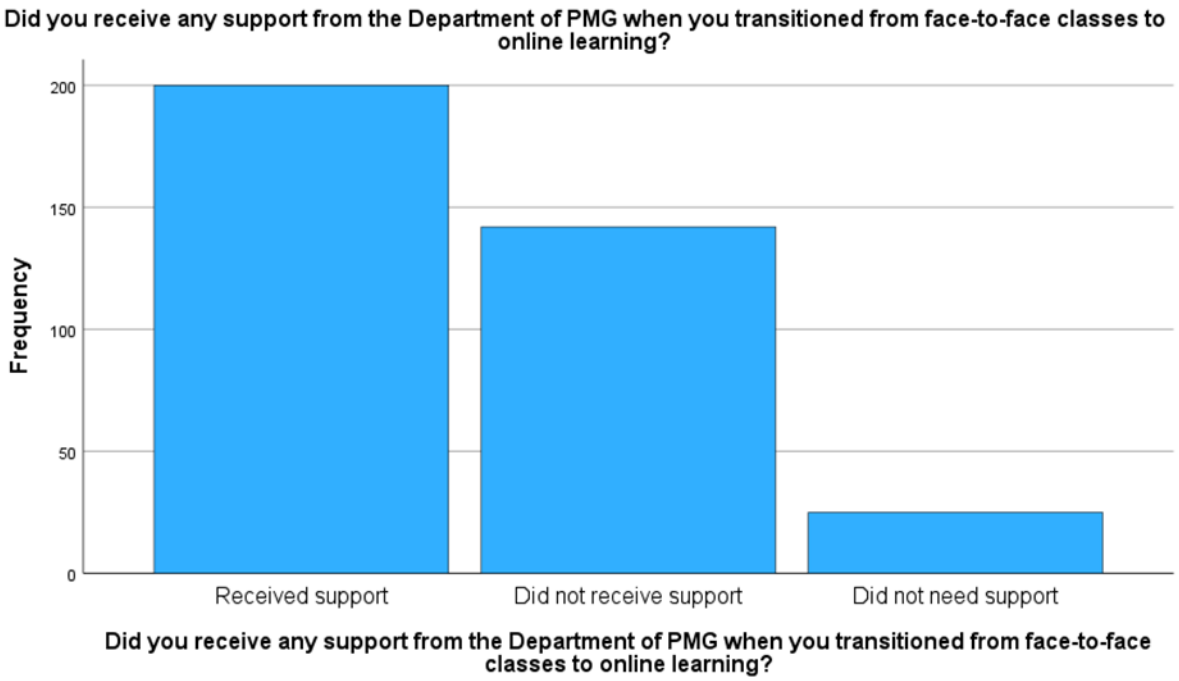

Figure 2. Support received from the PMG Department A (Source: Researcher's data)

70.4 percent of responders concur that e-learning has favourably impacted teaching and learning during the lockdowns associated with COVID-19. Merely 9.9 percent of the respondents appear to dissent regarding the good impact of e-learning on teaching and learning during the COVID-19 pandemic. The table below presents the responses provided by the respondents. As seen in table 2:

Table 2. E-learning's positive contribution during COVID-19

Responses		Frequencies	Percentages
Yes, it has been effective.		293	70.4
No, it has not been effective.		41	9.9
I am not sure/l don't know.		80	19.2
Other (Please specify)		1	0.2
Total		**415**	**100**

Source: (Researcher's data)

Furthermore, 168 respondents strongly agree that e-learning makes teaching and learning flexible. 148 respondents also agree that e-learning makes teaching and learning flexible. Only 23 respondents disagreed, and only 11 respondents strongly disagreed. The table 3 indicates how respondents answered the question about flexibility.

Table 3. Blackboard making teaching and learning flexible

Responses		Frequencies	Percentages
Strongly agree		168	40.4
Agree		148	35.6
Strongly disagree		11	2.6
Disagree		23	5.5
Uncertain		35	8.4
I don't know		22	5.3
Total		**407**	**100**

Source: (Researcher's data)

7. Discussion

This part aimed to evaluate the results of the primary findings against the current literature. This section evaluates the alignment of the study's primary findings with the current scientific literature. This section

selects specific questions from the questionnaire that were posed to respondents that strategically addressed the primary inquiry of this research.

The screening method was essential to confirm that the selected sample was focused on e-learning. 414 respondents utilised the online system, reflecting the university's rapid shift to e-learning during the COVID-19 shutdown. Respondents utilise multiple technologies to attend online classes, as the university offered laptops to first-year students on a loan basis. Individuals with NSFAS money are entitled to obtain a computer or tablet. Table 4 illustrates the quantity of students utilising online classes across different platforms and venues.

Table 4. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Do you use an online learning portal	415	1	2	1.05	.214
How do you access online classes?	481	1	4	2.67	.849
Where do you access online classes?	457	1	6	2.12	1.044
Valid N (listwise)	415				

Source: (Researcher's data)

Table 5. Pearson Correlation Between 1st- and 2nd-Year Students' Experiences With E-Learning During COVID-19 Lockdown

		1st	2nd
1st	Pearson Correlation	1	,878**
	Sig. (2-tailed)		<,001
	N	65	60
2nd	Pearson Correlation	,878**	1
	Sig. (2-tailed)	<,001	
	N	60	62
**. Correlation is significant at the 0.01 level (2-tailed).			

A correlation was established across groups to examine how respondents' answers to the questions were influenced by their educational level. The Pearson Correlation was employed as the study data was anticipated to have a normal distribution. The findings reveal a correlation of .878 between the first and second years,

indicating a substantial positive relationship; this suggests that both cohorts had equivalent levels of e-learning density during the COVID-19 lockout. Table 5 demonstrates the relationship between the first and second years.

A positive correlation of .697 was identified between the 2nd and 3rd years, indicating that the transition to online schooling during the COVID-19 lockdown was markedly similar for both years. See table 6.

Table 6. Pearson Correlation Between 2nd- and 3rd-Year Students' E-Learning Adaptation and Engagement

		2nd	3rd
2nd	Pearson Correlation	1	,697**
	Sig. (2-tailed)		<,001
	N	62	42
3rd	Pearson Correlation	,697**	1
	Sig. (2-tailed)	<,001	
	N	42	43
**. Correlation is significant at the 0.01 level (2-tailed).			

Furthermore, the third and fourth years exhibit the highest positive correlation at .885; this suggests that these two groups were already familiar with e-learning prior to the COVID-19 lockdown, and hence, the rapid shift to e-learning during the lockdown did not disrupt them. The table 7 demonstrates the positive link between the third and fourth years.

Table 7. Pearson Correlation Between 3rd- and 4th-Year Students' Familiarity and Response to Online Learning Platforms

		3rd	4th
3rd	Pearson Correlation	1	,885**
	Sig. (2-tailed)		<,001
	N	43	32
4th	Pearson Correlation	,885**	1
	Sig. (2-tailed)	<,001	
	N	32	46
**. Correlation is significant at the 0.01 level (2-tailed).			

Additionally, there exists a substantial positive correlation of .840 between the 4th year (Honours) and the 5th year (Masters), demonstrating the adaptability of both groups to the e-learning environment necessitated by the abrupt lockdown. Table 8 demonstrates a substantial positive link between the fourth and fifth years.

Table 8. Pearson Correlation Between 4th- and 5th-Year Students' Flexibility and Effectiveness in E-Learning Contexts

		4th	5th
4th	Pearson Correlation	1	,840**
	Sig. (2-tailed)		<,001
	N	46	25
5th	Pearson Correlation	,840**	1
	Sig. (2-tailed)	<,001	
	N	25	26
**. Correlation is significant at the 0.01 level (2-tailed).			

A majority of responders, 293, reported that e-learning positively impacted teaching and learning during the COVID-19 lockdown. 200 respondents observed that e-learning had effectively enabled students to cultivate independence and enhance their time management skills, while 110 claimed that e-learning contributed to improved academic achievement. The academic achievements can be seen despite the challenges they faced, including load-shedding, network and data limitations, insufficient understanding, tension, dissatisfaction, anxiety around technology, a lack of belonging, and disengagement. Mpungose (2020) conducted a study at a South African institution to examine the transition experiences of students from face-to-face to online learning. The findings suggest that students feel at ease with e-learning platforms due to their diverse instructional methods. The results indicate that participants adapted to the newly implemented e-learning platform in first-year classrooms during COVID-19.

This study demonstrates that students encountered several barriers throughout the shift to e-learning. The investigation revealed no associated accessibility problems were discovered. Despite encountering challenges with data and networks, students possessed gadgets to engage in e-learning. The majority of students own a personal laptop due to the support and initiatives by the university. Further research is necessary to comprehensively understand the effects and obstacles associated with e-learning in situations of confinement. Research indicates that accessibility is essential for a good and effective online learning experience. The study revealed that the people responsible for providing support to students such as lecturers, also experienced their own set of issues. These issues also added to the challenges faced by these students. The findings align with the study by Mgoduka and Zwane (2023), which indicates that educators also faced numerous obstacles during the shift from traditional to online learning. These challenges encompass limited experience and inadequate training in online pedagogy, difficulties in planning and adaptability, network and connectivity issues, insufficient teaching and learning resources, excessive workload, stress, and unfavourable physical environments (Mgoduka and Zwane, 2023)

Nonetheless, power outages, restricted networks, and data limitations might affect students' access to online learning, despite possessing the necessary hardware. The literature suggests that this inequality issue remains neglected in higher education. The results indicate that participants adapted to the newly implemented e-learning platforms in first-year courses during COVID-19, as evidenced by a high response rate reflecting their familiarity with e-learning. The results are further corroborated by the efficacy of utilising an e-learning platform for instructing first-year students at UJ during the COVID-19 pandemic. The findings indicate that e-learning circumstances affect perceptions of educational purpose (teaching and learning); e-learning positively contributes to establishing a pedagogical paradigm that enhances teaching and learning in higher education institutions. The findings indicate that several elements can effectively enhance teaching and learning in higher education institutions as evidenced in the study by Queiros and de Villiers (2016). The results stem from students' feedback on e-learning's flexibility, its provision of autonomy, and its enhancement of self-efficacy, time management, and planning skills. Implementing an e-learning environment encompasses not only technological considerations but also pedagogical and instructional factors.

The outcomes of this study demonstrate a favourable outcome that e-learning has encouraged students to achieve self-sufficiency, which remains a continuous objective. During the pandemic, students transitioned to e-learning unprepared, and this study reveals an enhancement in self-efficacy and cognitive engagement. Independent work capability is a crucial aspect for the successful implementation of e-learning. Prior research by Alghamdi et al. (2020) establishes that students proficient in using diverse self-regulated techniques are more inclined to achieve their academic objectives. This study demonstrates that e-learning, especially during a crisis or emergency, was essential for empowering students by enabling them to acknowledge their abilities and knowledge, thereby fostering confidence in their capabilities. In this scenario, students could operate autonomously, encompassing time management and fostering independence and self-sufficiency. Successful e-learning requires time for identification (Hodges et al., 2020).

The theory offered a comprehensive framework for comprehending how a constructivist approach to learning and teaching underscores that learners actively create their understanding of new material by linking it to their existing knowledge and experiences. This approach transitions the emphasis from the instructor as the principal source of information to the student as an active architect of knowledge. This is further corroborated by Koohang et al. (2009). Constructivist educational technology can transform online environments into effective classrooms, enabling students to participate in collaborative and innovative knowledge creation, especially in higher education. Implementing constructivist pedagogy in electronic learning can markedly improve student-teacher relations and cultivate a more individualised educational experience. Constructivist methodologies in electronic learning tackle the issues of student participation and interaction, thereby fostering a student-centered learning environment. Technology utilisation in constructivist learning environments accommodates various learning styles and tempos, which is especially crucial in e-learning situations. Conversely, the obstacles educators have in applying constructivist concepts inside technology-enhanced classrooms indicate that a more profound comprehension of these technologies may facilitate the surmounting of impediments to effective instruction.

Venter (2009) posits that constructivism, in general, provides less guidance on learner acquisition or learning processes. It is understood that learning occurs consciously and voluntarily, requiring the learner's active engagement in the educational experiences to internalise knowledge. Intrinsic motivation is one of the most effective means of fostering initiative for sustained success in learning endeavours. Students exhibited

predominantly favourable perceptions of online courses during the COVID-19 pandemic; some even favoured the continuation of these classes after the pandemic (Zheng et al., 2021); this was corroborated by the findings of this study as well as several studies in nursing (Riley et al., 2021) and others. Students embraced online learning tools like Blackboard. In evaluating Blackboard's online learning interface, the majority of respondents (216) claimed that it is comprehensible, with 93 respondents asserting that it facilitates learning; this is further corroborated by a study conducted by Uwizeyimana et al. (2024).

A majority of students (130) assessed the blackboard as user-friendly, whilst 39 deemed it easy; this aligns with Madzimure's (2022) study, which revealed that most participants found Blackboard to be both easy to use and beneficial. Furthermore, it is evident that during COVID-19, students perceived teaching and learning as flexible when facilitated on Blackboard (Zheng et al., 2021); this finding was corroborated in this study, as the majority of respondents (168) strongly concurred that teaching and learning were flexible on Blackboard (the e-learning platform used at UJ). Additional research corroborates these findings (Refer to Ismail et al., 2022; Simelane 2021). Secondary education significantly facilitates an individual's adaptation to a university's online learning programs. A study by Uwizeyimana (2024) indicates that the majority of students concurred that their exposure to e-learning, the Internet, and computing in high school affected their engagement in e-learning at the university level. This study corroborates this, as the majority of respondents said that a higher educational background influences an individual's utilisation of Blackboard.

Moreover, e-learning arguably enhanced teaching and learning during the Covid-19 pandemic. Numerous studies have demonstrated that students typically see online education as beneficial for enhancing writing abilities and overall comprehension of the course (Sun and Chen, 2016; Henao, 2017; Maulidah and Aziz, 2020). This study indicated that the majority of students concurred that e-learning was beneficial during COVID-19. Additionally, numerous research demonstrate that e-learning has enhanced student academic performance and motivated students to engage more in online sessions (Baturay and Yukselturk 2015; Li 2022). Prior research has demonstrated that students who exhibit greater engagement in online classes with instructors and peers are more predisposed to academic success (Gray and Diloreto 2016), and those who participated more actively in online courses during Covid-19 achieved superior grades (Darling-Aduana et al., 2022).

8. Conclusion

The study sought to examine the impact of e-learning platforms on the provision of quality education during the pandemic at the University of Johannesburg.

The COVID-19 pandemic prompted the rapid implementation of digital technology to provide education to individuals confined at home owing to lockdown measures. Digital technology has facilitated teaching and learning, erasing physical borders and allowing the workforce to obtain desired degrees online. The university and the pertinent department assisted the students in their transition to e-learning. A positive link exists between students at all academic levels at the University of Johannesburg and their engagement in e-learning activities. Students appear to have equal access to e-learning activities, including first-year students from diverse backgrounds based of the initiatives by the institution under study. The findings demonstrate an increasing demand for e-learning at the University of Johannesburg. Students at all academic levels have actively participated in e-learning. The study revealed that the e-learning system not only improves

accessibility but also cultivates a more engaging, adaptable, and individualised learning experience for students.

9. Limitations and recommendations

The study required validation to ascertain dependability. Making use of limited measuring methods posed limitations to the study. The researcher could have made use of tools such as ANOVA. The researcher authenticated the study's measurement instruments to alleviate restrictions. E-learning is a rapidly evolving research area; therefore, there exists a likelihood of replicating previous results or inadequately addressing contemporary issues.

The study recommends that future research should incorporate longitudinal studies, as they are crucial for monitoring the progression of students' learning experiences and outcomes over time, thereby offering insights into the efficacy of e-learning interventions. Longitudinal diagnostic models will enable researchers to evaluate students' latent qualities, including knowledge and abilities, to discern their strengths and shortcomings throughout their educational trajectory. Utilising experimental approaches in conjunction with longitudinal designs, the next research could delineate specific factors influencing e-learning adoption, hence improving causal interpretations of the interactions among essential variables.

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