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# Perceptions of E-learning amongst Public Health Students at a South African University

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**Abstract:- Since the introduction of technological advancements in the 1990s, technology has permeated various aspects of our homes and livelihoods, including the educational system. This shift has led to a greater reliance on web-based tools in education, further accelerated by the COVID-19 pandemic in 2020, which forced many institutions to transition to fully online programs to ensure safety and continuity. In this context, understanding students' perceptions of e-learning and the challenges they face is crucial, as these factors significantly impact the success of their academic experiences and outcomes. Therefore, this study aimed to understand Public Health students' perceptions, experiences, and attitudes toward online learning, seeking insights into their level of satisfaction on this mode of education. The study involved 227 students in a South African University's Postgraduate Diploma in Public Health program. All students received a study information link and the Perceptions towards e-learning Questionnaire, with their e-learning perceptions evaluated through descriptive and inferential statistics, covering aspects such as attitude, social influences, effectiveness, accessibility, ease of use, and satisfaction. The study found robust support for online learning, with 98% preferring it and 97% showing increased interest. While 76% valued in-person interactions, 94% noted improved work-school-family balance with online learning. It proved effective, with 90% endorsing benefits for test preparation and 79% favoring it over in-class learning. Accessibility was positive, as 91% reported no information loss, and 86% faced no internet access issues. Regarding ease of use, students preferred the learning management system, choosing online over face-to-face. Overall, students reported enhanced computer skills and high e-learning satisfaction. The study indicates online learning effectively achieves educational goals, providing convenience, enhancing engagement, and boosting overall satisfaction. Surveyed individuals generally express high acceptance and contentment with online education.**

***Keywords:-*** *E-learning, Perceptions, Satisfaction.*

## I. INTRODUCTION

Negative student experiences and perceptions of e-learning are often linked to the challenges students face. A wealth of literature highlights these challenges. Challenges that can hinder learning experiences and academic program outcomes include that of poor internet connectivity [1]; household demands [2]; household distractions such as watching TV and being on social media [3]; and lack of self-discipline [4] amongst others. These challenges can also lead to reduced motivation and persistence in studies.

Researchers such as Song and Colleagues emphasized that the success of e-learning hinges on students' positive perceptions and experiences with the system [5]. Understanding perceptions of e-learning is essential as it significantly influences the achievement of learning outcomes and learning process as a whole of students participating in e-learning [2, 4, 6, 7]. By ascertaining students' perceptions and preferences towards e-learning, educational institutions can better equip themselves to design effective e-learning environment for students when opting for online studies. This in turn could result in increased motivation and morale amongst students to complete their studies and ultimately have positive experiences in their online learning journey [4]. And by determining student preferences and perceptions of e-learning, educational institutions will be better equipped to develop quality learning content and an ideal study cyberspace that could promote effective and productive learning [4]. Additionally, student satisfaction with e-learning is vital for optimizing learning strategies, warranting further investigations [8]. Hence, this study was initiated in response to the need for more research on students' e-learning perceptions specifically in a fully online qualification with no contact alternative. Leading to the research question, What are the perceptions and experiences of e-learning amongst Public Health students? Insights from prior studies, combined with this research, will inform improvements in how e-learning is delivered in education, fostering positive student experiences and academic success.

### ➢ *Statement of the Problem*

E-learning has become a pivotal component of higher education, particularly in the context of fully online qualifications. However, despite its growing adoption, challenges such as poor internet connectivity, household distractions, lack of self-discipline, and reduced motivation persist, significantly impacting students' learning experiences and academic outcomes [1, 2, 3, 4]. These barriers not only hinder students' ability to engage effectively with online learning platforms but also influence their perceptions and satisfaction with e-learning.

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Understanding students' perceptions and experiences with e-learning is critical, as positive attitudes toward e-learning are directly linked to academic success and the achievement of learning outcomes [4,5]. However, existing research often focuses on blended learning approaches, leaving a gap in understanding the unique experiences of students enrolled in fully online programs with no face-to-face alternatives.

Therefore, this study addresses this gap by examining the perceptions and experiences of Public Health students pursuing a fully online qualification at a South African university. By identifying the factors that shape students' attitudes, satisfaction, and the perceived effectiveness of e-learning, this research aims to inform the development of more effective e-learning environments that enhance student engagement, satisfaction, and success.

➢ *Aim and Objectives of the Study*

The research aimed to explore Public Health students' perceptions and experiences of e-learning. This included three main research objectives: to determine the perceptions of e-learning among Public Health students; to identify attitudes and levels of satisfaction regarding e-learning among Public Health students; and to assess the effectiveness of the learning management system (LMS) for e-learning in the context of Public Health students.

## II. LITERATURE REVIEW

➢ *History of E-learning*

Distance learning has evolved significantly over the years, from shorthand lessons delivered by mail in the 1700s [9] to correspondence programs in the late 1800s [10]. The advent of computers and the internet in the twentieth century revolutionized distance education, introducing e-learning tools that made learning more accessible and convenient [11]. The internet's rapid spread and declining costs further increased its accessibility, benefiting middle- and lower-income populations [11]. By the twenty-first century, virtual learning environments flourished, providing global access to extensive online information and e-learning opportunities [11]. E-learning eliminates barriers like geography and time, offering education to those previously unable to attend traditional lectures. It is now recognized as the “now” best option for learning [12].

➢ *Methods of E-learning Service Delivery*

E-learning and distance education are interconnected concepts delivered through various systems such as portals, learning management systems (LMSs), and social media [12]. LMSs like Blackboard, Moodle, and Sakai are widely used, with Blackboard being the most popular among higher education institutions [13]. Portals serve as access points for learning services via web browsers, offering features such as course catalogs, registration, and library access [12]. LMSs, on the other hand, provide a platform for deploying and managing learning content, tracking progress, automating grading, and enabling communication between students and lecturers [12]. These systems allow access through various devices, enabling students to study at their own pace and balance other commitments [14]. Research highlights the importance of aligning online materials with course outlines and incorporating engagement and collaboration to enhance student satisfaction with e-learning [1, 6]. Cultural considerations in LMS design also influence e-learning adoption [15].

Social media platforms like WhatsApp, Facebook, and YouTube complement LMSs by fostering peer interaction and collaboration [6]. They enable students to share ideas, discuss course content, and create supportive networks [16]. Social media also provides flexibility for communication, making it easier for students to interact with instructors and peers compared to traditional face-to-face discussions [16]. These tools enhance motivation and engagement while offering quick and convenient access to learning resources.

➢ *Importance of Determining Student Perceptions*

Perception is the process through which individuals interpret their environment based on sensory impressions, which may differ from reality [2, 17]. In this study, the focus is on e-learning, defined as learning facilitated by electronic resources such as computers and the internet [7, 18]. Understanding student perceptions is vital for improving the quality of e-learning services provided by educational institutions [19]. Insights into students’ views can help institutions refine e-learning delivery methods and future educational strategies [6]. By aligning with student needs, institutions can foster an environment that boosts motivation, enhances learning experiences, and promotes course completion [4].

Researching student perceptions also helps address challenges in online learning, ensuring that course materials meet learning outcomes holistically [2, 4]. This feedback supports the design of personalized and effective e-learning systems that maximize benefits and student satisfaction [2]. Identifying preferences and perceptions enables institutions to create high-quality content and online environments conducive to productive learning. This, in turn, enhances student readiness and willingness to participate, leading to better outcomes [4]. Research into perceptions and their impact on e-learning is essential for shaping future teaching practices [20].

➢ *Factors Influencing Student Perceptions of E-learning*

Ismail and Colleagues highlight the following factors to have a bearing on the way students perceive e-learning: attitudes, social influences, effectivity, accessibility, ease of use, in addition to satisfaction which are discussed below [21].

- *Perceptions and Attitudes*

Student perceptions and attitudes toward their studies are shaped by beliefs, feelings, and motivations, influencing problem-solving and goal setting [22]. Positive attitudes are crucial for e-learning success, which varies globally due to socio-economic and resource differences [21]. Students’ experiences with technology and motivation to complete studies significantly influence these attitudes [21].

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Challenges such as managing theoretical and practical modules, rigid timetables, and home responsibilities contribute to stress and negative attitudes, impacting performance [6, 22]. Economic hardships like job losses further demotivate students, hindering their ability to continue studies [22].

Conversely, online learning fosters efficient time management and course interest. A study on medical students found that e-learning's risk-free environment reduces anxiety and promotes self-confidence by allowing students to learn from mistakes without embarrassment [1; 12]. Familiarity with e-learning tools also drives positive attitudes, while flexibility enables students to tailor learning to their schedules, promoting independence and optimism [12, 23]. E-learning's structured materials further support time management and goal achievement [12].

- *Social Influences*

Social influences significantly shape students' attitudes toward their studies, including perceptions of e-learning, which are impacted by peer and lecturer interactions and work-life balance [1, 21]. Lecturer competence, timely feedback, and engaging teaching methods are key to fostering positive perceptions and course satisfaction [4, 24]. Poor communication, delays in responses, and a lack of interaction often lead to negative experiences and dissatisfaction [6].

Online learning offers unique benefits, such as reducing biases and enabling shy or insecure students to engage more freely [12]. It can also foster collaboration and interaction through digital platforms, as highlighted by studies in Australia and Ukraine, where students reported enjoying e-learning and improved academic performance [1; 25].

However, challenges like poor connectivity, cultural factors, and home responsibilities hinder participation, especially in South Africa, exacerbating the digital divide and leading to dropout rates [1, 26]. Flexibility, a key strength of e-learning, allows students to balance studies with personal commitments, emphasizing the importance of self-discipline and motivation [4]. Despite challenges, e-learning's advantages often outweigh its drawbacks.

- *Effectivity*

Effectivity in e-learning refers to its ability to achieve intended outcomes, enabling students to benefit maximally [4]. E-learning can be synchronous or asynchronous, with students generally preferring real-time lectures. However, research shows mixed preferences, with some students favoring pre-recorded content (4, 27]. E-learning is considered effective as it promotes ease of studying, time efficiency, and better presentation of course material [21]. Studies indicate that students find e-learning enjoyable, flexible, and convenient, with some preferring recorded lectures that they can access at their own pace [4; 28]. This flexibility reduces learning time by 25% to 60% compared to traditional learning, enhancing productivity [12]. E-learning's student-centered approach, with smaller units based on learning objectives, helps students tailor their studies to personal goals, leading to higher satisfaction and retention [4]. Additionally, students appreciate fewer disruptions, comfort, and easy access to materials [1]. Overall, positive perceptions of e-learning stem from effective course material, user-friendly interfaces, and flexible delivery methods [21, 27].

- *Accessibility*

Accessibility in e-learning refers to the availability of resources and support, including technical assistance, internet access, and the use of personal devices for studying. This influences students' perceptions and experiences, with those who feel confident in their online learning abilities reporting greater satisfaction [28]. E-learning platforms offer flexibility, allowing students and educators to access and share materials anytime, anywhere, using devices like phones and tablets [32]. However, accessibility varies based on socio-economic status, with students from wealthier backgrounds experiencing fewer issues purchasing devices and having better technical skills [4]. Those from lower-income homes often face challenges with device access and technical skills, leading to negative experiences [26]. Content accessibility is also affected by inadequate training and system orientation, making it difficult for some students to complete tasks online [6]. Technological issues, such as device malfunctions, can further hinder students' learning and create financial burdens when they need to purchase replacements [29]. Additionally, poor digital literacy and internet connectivity issues, including data limitations and speed, can significantly affect e-learning experiences and perceptions [21]. Despite these challenges, students often go to great lengths to succeed in e-learning, demonstrating resilience in overcoming obstacles [1].

- *Ease of use*

Ease of use refers to how students perceive the simplicity and convenience of using e-learning systems, particularly the Learning Management System (LMS). This perception is influenced by how easy students find the LMS to navigate and how it compares to traditional face-to-face learning [21]. When adopting new systems, initial resistance from users is common, but it can be addressed through proper training, particularly in the first year of study, to ensure the LMS supports quality education [21, 22]. LMSs like Blackboard play a critical role in conveying course content, scheduling, communication, and tracking student progress [13, 30]. Studies show that LMSs increase student participation and improve classroom dynamics [2, 31]. A well-designed LMS leads to higher student satisfaction, with many preferring e-learning when it is well-executed [4]. Despite its benefits, the transition to online learning during the COVID-19 pandemic, without proper planning, led to negative experiences for some students [1]. Online learning is also seen as more convenient than traditional education, as it eliminates travel and accommodation costs, saving students between 50%-70% compared to face-to-face study [33].

- *Satisfaction*

Satisfaction refers to the degree of pleasure people feel based on their perceptions and expectations (Yu, 2022). In the context of e-learning, student satisfaction is shaped by the alignment of their expectations with actual learning outcomes. Factors such as lecturer competence, timely feedback, access to LMSs, resources, and student performance influence

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satisfaction [21]. Research on e-learning satisfaction has gained prominence, especially after the increased adoption of online learning post-COVID-19 (Yu, 2022).

Student satisfaction is crucial for e-learning success, impacting motivation and retention. It depends on factors like digital skills, willingness to learn, and the quality of course design and instruction [21]. Well-structured courses with clear content, prepared lecturers, and timely feedback contribute to positive experiences, as does the flexibility of studying at one's own pace [2, 4]. High satisfaction levels are linked to improved performance, program completion rates, and higher grades [23]. Satisfied students are more likely to continue their studies online and recommend e-learning to others. Moreover, e-learning helps improve computer skills, bridging the digital divide, especially in low-income areas [12].

## III. MATERIALS AND METHODS

- *Study Design*

This study used a quantitative, descriptive approach. Data was collected through an online survey using Google Forms. The quantitative method was chosen for its ability to provide a numerical and statistical perspective, enabling effective conclusions and inferences from a representative sample [34]. Online surveys were selected as a cost-effective way to gather data from a large sample, while minimizing researcher bias during data collection [34].

- *Setting*

This study took take place online whereby qualifying students were sent a link and requested to fill in a questionnaire via the Google Forms platform.

- *Sample*

In this study, the population refers to all students studying towards the Post Graduate (PG) Diploma in Public Health at a South African University, who had completed at least 12 out of 18 months of e-learning (inclusion criteria) and agreed to voluntarily participate in the study. Moreover, this qualification is accredited by the Department of Higher Education, which entailed adult, postgraduate students, that study online and off-campus. The study included 3 randoms cohorts of students studying towards the above-mentioned qualification.

The sampling procedure followed a convenience, simple random sample technique. Using the Raosoft computer package (reference), allowing for a 5% marginal error, with a 95% confidence interval from a population size of 227, a sample size of 143 was calculated, and 143 completed questionnaires were returned for analysis.

- *Instrument and Variables*

The study utilized a questionnaire developed by Ismail and co-authors [21], which comprises six key subscales: attitude, social influences, effectivity, accessibility, ease of use, and satisfaction. The attitude subscale assessed students' perspectives on e-learning, examining their tolerance and perception of its time efficiency. Social influences explored the importance of traditional face-to-face lectures, peer interactions, educational goals, and the balance between studying, work, and family life. Effectivity looked into students' inclination towards e-learning in comparison to face-to-face learning. Accessibility delved into students' access to learning materials, internet connectivity, and technical challenges. The ease of use subscale considered students' familiarity with the LMS. Finally, the satisfaction subscale investigated students' willingness to use the online learning platform for their studies.

## IV. RESULTS AND FINDINGS

- *Demographics*

This study encompassed a study population of 227 students drawn from three random cohorts, in which 143 students participated in the study and completed the survey. In 2023, within the study population (N=227), the average age of the students was 41, the gender distribution was 189 females (84%) and 37 males (16%). The predominant racial identification was African, constituting 87% (n=197), followed by individuals identifying as both Coloured and Indian at 4.5% (n=10), and White at 4% (n=9).

- *Perceptions and Attitudes*

Most respondents (98%) from this fully online qualification supported the integration of online learning into their courses, with a large percentage (97%) indicating that it enhanced their interest in the subject matter. Majority of participants (91%) reported that online learning made the subject more enjoyable, while 92% expressed sufficient motivation to complete online content within a suitable timeframe. Additionally, 95% of respondents expressed a preference for using technology to aid their studies. Overall, the aggregated responses (94%) showed a highly favorable perception and attitude towards e-learning, emphasizing its value as a valuable addition to their courses, contributing to enjoyment, motivation, and overall effectiveness in the learning process. These findings align with prior research, particularly the work of Muthuprasad and collaborators [4], highlighting a consistently positive perception and attitude towards online learning, with respondents perceiving it as a beneficial tool that enhances their interest, enjoyment, motivation, and preferred study method.

- *Social Influences*

A notable portion of participants (60%) acknowledged that online learning enhanced their interactions with classmates, while a larger percentage (76%) underscored the significance of in-person interactions with their lecturers. Furthermore, 94% agreed that online learning facilitated a better work, school, and family life balance. Overall, the aggregated results indicated that respondents (77%) experienced positive social influences in their e-learning journey. Online learning was perceived as a catalyst for improved student engagement and peer interaction, fostering a sense of connection within the virtual learning environment. These findings, consistent with previous studies [1, 4, 12, 13], highlight the constructive impact of online learning on classmate interaction and work-life balance. However, they also emphasize the enduring importance of face-to-face

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interactions with lecturers for a significant portion of the participants.

- *Effectivity*

A large majority of participants (90%) found studying for tests more manageable through online learning, and an even larger percentage (93%) believed that it streamlined their course, making it more time-efficient. Moreover, most respondents (79%) favoured online learning over traditional in-class methods, while 91% agreed that the online course content was well-presented, and a substantial number (89%) found it easy to grasp. In summary, aggregated responses (88%) showcased a strong consensus regarding the effectiveness of e-learning. Participants perceived online learning as a valuable tool that simplifies test preparation, enhances time management, improves content delivery, and bolsters overall comprehension. These findings, akin to the research by Avilova and their research team, who indicate that online learning is widely regarded as beneficial in terms of study facilitation, time efficiency, effectiveness, content presentation, and overall usability [1].

- *Accessibility*

Most respondents (81%) found that they received ample technical support during their online learning experience, and a significant 91% believed that they encountered no information gaps with this approach. Additionally, 86% reported that internet accessibility was not a hindrance, while 92% confirmed seamless access to online content without technical complications. Furthermore, 99% agreed that their personal devices (cell phone, tablet, or laptop) greatly assisted them in their online learning. Overall, a substantial 90% of respondents acknowledged that e-learning was highly accessible and convenient. They experienced minimal technical issues, received satisfactory technical support, and encountered no significant hindrances in accessing online content. These findings reflect the positive experiences of the respondents regarding the accessibility of online learning, aligning with the outcomes of the study conducted by Cranfield and Colleagues [26].

- *Ease of use*

An overwhelming majority of respondents (98%) found the online learning platform, Blackboard, user-friendly, with 97% agreeing that it provided convenient access to study materials. Furthermore, the "Ease of Use" subscale revealed that 89% of respondents favored online learning over traditional face-to-face methods. In summary, an aggregated 94% of respondents found online learning easy to navigate and reported improvements in their computer skills while using the LMS. They not only deemed Blackboard user-friendly but also preferred digital platforms for information and study. These results indicate the respondents' positive experiences with online learning in terms of its user-friendliness, convenience, and effectiveness, aligning with findings from previous research [1, 4].

- *Satisfaction*

Majority (94%) of respondents preferred to receive information through Blackboard, while 90% reported an improvement in their computer skills through their engagement with the LMS. In terms of satisfaction, the study found that 95% were open to enrolling in another online course, and 96% were not only satisfied but also willing to recommend the online learning module to others. Moreover, 87% of respondents felt that the online learning approach improved their understanding of course content. Overall, an impressive 92% of participants expressed a high level of satisfaction with e-learning. These results reflect a consistent pattern of positive experiences and satisfaction with online learning, mirroring the research conducted by other studies [1, 4].

## V. DISCUSSION

The findings of this study underscore the overwhelmingly positive reception of online learning among students and its substantial impact on their motivation, engagement, and overall study preferences. Students particularly appreciated the efficiency of online learning in test preparation, its capacity to enhance comprehension of course materials, and the convenience it offered.

Notably, majority of respondents expressed their inclination to incorporate online learning into their coursework, acknowledging its capacity to deepen their interest in the subject matter. While online learning rendered the subject more enjoyable and sustaining ample motivation to complete the online content within a suitable timeframe, a small percentage of students experienced diminished motivation, challenges with concentrating and self-discipline. Similarly, a study conducted by Avilova and colleagues among medical students in Ukraine and South Africa revealed that online learning empowered students to manage their time effectively and fostered an increase in their interest in their chosen courses [1].

While participants experience improved interactions with classmates the importance of face-to-face interactions with their lecturers is still high. Nevertheless, online learning's potential to amplify interactions between lecturers and students was noted. Learning in an online environment minimized discrimination and prejudice, offered greater privacy, and facilitated the engagement of shy, insecure, or verbally challenged learners by minimizing socio-cultural biases and fostering enriching interactions between educators and students [12].

The study reveals that online learning offers significant benefits, including enhanced motivation, engagement, and flexibility, improved computer skills, and cost savings for students. Effective design, quality learning materials, and strong LMSs contribute to a positive learning experience. Students' experiences of online learning are significantly influenced by the way it is structured and the support they receive. The advantages of online learning make it a preferred mode of education, provided it is well-implemented and user-friendly.

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## VI. CONCLUSION

In response to the research question, the study unveils the overwhelmingly positive experience of public health students towards e-learning. Except for an increased face-to-face interaction with the facilitator, the students scored high on all the framework aspects.

These insights suggest a student-centered approach is vital for designing engaging and effective online courses, emphasizing meaningful interactions, accessibility, user-friendliness, and satisfaction. Educators can use these principles to continue to create more gratifying online learning experiences.

## RECOMMENDATIONS

Future studies aimed at understanding students' perceptions of e-learning should employ a mixed methods approach. By incorporating qualitative, open-ended responses, it becomes possible to capture and document genuine emotions. The insights gleaned from such studies have the potential to enrich the quality and comprehensiveness of instructional designs based on the findings.

To ascertain the generalizability or refutability of the study results, it is advisable to employ and evaluate the "Perceptions and Attitudes Towards an E-learning Approach Questionnaire" in various countries and other HEIs.

The HEI in focus can leverage these findings to enhance its existing course instructional designs, fostering the creation of a more comprehensive program that incorporates students' perceptions.

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