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 the safety and continuity of education provision. 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 with this mode of education delivery. The study involved 227 students in a South African University Postgraduate Diploma in Public Health program. All students received a study information link and the Perceptions towards e-learning Questionnaire. Their e-learning perceptions were 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% favouring 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 findings indicate online learning effectively achieves educational goals, providing convenience, enhancing engagement, and boosting overall satisfaction. The survey respondents generally expressed high acceptance and contentment with online education.

Keywords: *e-learning; perceptions; satisfaction*

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 (Avilova et al., 2022); household demands (Surani, 2020); household distractions such as watching TV and being on social media (Gumede & Badriparsad, 2021); and lack of self-discipline (Muthuprasad et al., 2021) amongst others. These challenges can also lead to reduced motivation and persistence in studies.

Song, et al. (2004) emphasized that the success of e-learning hinges on students' positive perceptions and experiences with the system. Understanding perceptions of e-learning is essential as it significantly influences the achievement of learning outcomes and the learning process as a whole, of students participating in e-learning (Di Slavio, 2008, Muthuprasad et al., 2020, Nasution & Ahmad, 2020, Surani, 2020). By ascertaining students' perceptions and preferences towards e-learning, educational institutions can better equip themselves to design effective e-learning environments 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 (Muthuprasad et al., 2020). By determining student preferences and perceptions of e-learning, the educational institution will be better equipped to develop quality learning content and an ideal study cyberspace that could promote effective and productive learning (Muthuprasad et al, 2021). Additionally, student satisfaction with e-learning has been found to be vital for optimizing learning strategies, warranting further investigations (Roach & Lemasters, 2006). 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. This has led to the following research question: *What are the perceptions and experiences of e-learning amongst Public Health students?* It is expected that 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.

AIM AND OBJECTIVES

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.

METHODS

Ethics Statement

The research was approved under the ethical approval (451/2021) from the Faculty of Health Sciences Research Ethics Committee, University of Pretoria and the University of Pretoria's Survey Coordinating Committee. Moreover, participants were required to fill out an informed consent before commencing with answering the questionnaire.

Study design

This study took on a quantitative approach which was descriptive in nature. Moreover, data were collected by means of a survey questionnaire via online Google Forms. Quantitative research was chosen as its numerical and statistical nature allowed for an enhanced perspective generated to provide effective conclusions and inferences drawn from a representative sample to explain and analyse data that were collected (Ehrlich & Joubert, 2014). Online surveys were selected as it is considered a cheaper alternative to collect data from a large sample population which also prevents researcher bias by the researcher being present at the time of data collection (Ehrlich & Joubert, 2014).

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.

Participants

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 random cohorts of students studying towards the above-mentioned qualification.

The sampling procedure followed a convenience, simple random sample technique.

Variables

The study utilized a questionnaire developed by Ismail, et al. (2022), 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.

Data Sources/Measurement

This study's theoretical framework was based on the study conducted by Ismail et al. (2022) that focused on perceptions and attitudes of health students in a South African university towards the blended and e-learning approach. The authors based their questionnaire on research that was conducted by three different studies: *Evaluating student satisfaction with blended learning in a gender-segregated environment* by Abou, Nachouki & Ankit (2012); *A study of student's perceptions of blended learning in certificate courses of Gulf Medical University* by Shantakumari & Sajith (2014); and *Perceptions and attitudes towards blended learning for English courses: a case study of students at university of Bisha* by Ja'ashan (2015).

This data collection instrument can be considered valid as the questionnaire was developed using questionnaires from three different studies, as mentioned above, to ensure that the questions achieved the intended purpose (Ismail et al., 2022). Moreover, since this research has been conducted previously by Ismail et al. (2022), reliability was tested and determined on the Likert-scale based items and was found to be reliable. Furthermore, owing to the use of an adapted questionnaire, each subscale was assessed for internal consistency. A subscale is deemed reliable if the Cronbach's alpha is greater than 0.70 (Bland & Altman, 1997). According to Ismail et al. (2022), the following subscales showed satisfactory reliability with Cronbach's alpha values: Attitude (0.852), Effectivity (0.800), Accessibility (0.885), Ease of use (0.740), and Satisfaction (0.867).

Bias

In this study, the researcher rigorously minimized bias by abstaining from incorporating personal influence, beliefs, or values into the research process. The researcher meticulously ensured that the research findings were solely derived from the collected data, with no room for the interference of personal opinions.

The deliberate selection of online surveys as the data collection method not only offered a cost-effective means of gathering information from a wide sample population but also eliminated the potential for researcher bias that might have arisen if the researcher had been physically present during data collection (Ehrlich & Joubert, 2014).

Participation in the study was entirely voluntary, thereby data objectivity was met. This approach was intricately designed to be free from researcher bias, ultimately resulting in a heightened level of data accuracy.

Study size: Using the Raosoft computer package, allowing for a 5% margin of 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.

Statistical methods: Data was entered onto an Excel spreadsheet and imported into StataCorp Stata 15 intercooled edition. This study utilized both descriptive and inferential statistics. Descriptive statistics organized and clarified the data by identifying patterns and trends through measures of central tendency (mean, median, mode) and variability (standard deviations, ranges, quartiles). The results were visually summarized using numerical tables and graphs. In contrast, inferential statistics allowed for generalizing findings to the entire population, a task not achievable by descriptive statistics (Vittinghof et al., 2005).

Moreover, responses yielded from "strongly agree" and agree were grouped into an "agree" category, which implied a positive perception. On the other hand, those responses of "strong disagree" and "disagree" were grouped into a "disagree" category, which implied a negative perception.

RESULTS

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 favourable 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 et al. (2021), 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 77% of respondents 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 (Muthuprasad et al., 2021; Avilova, 2022; Boshielo, 2014; Pollard & Hillage, 2001), 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 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 et al, (2022), who indicated that online learning is widely regarded as beneficial in terms of study facilitation, time efficiency, effectiveness, content presentation, and overall usability.

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 Cranfield et al. (2021).

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 favoured 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 by Muthuprasad et al. (2021) and Avilova et al. (2022).

Satisfaction

The 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% of the respondents 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 by Muthuprasad et al. (2021) and Avilova et al. (2022).

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, the 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 et al. (2022) 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.

While participants experienced 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 (Pollard & Hillage, 2001).

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.

KEY RESULTS

- The majority of respondents (94%) had a positive view of online learning, finding it enjoyable, motivating, and effective in their courses.
- Seventy-seven percent (77%) of respondents recognized the social benefits of e-learning, as it enhanced student engagement, meaningful interactions with classmates, and a sense of connection in the virtual learning environment.
- Eighty-eight percent (88%) of respondents affirmed the effectiveness and efficiency of e-learning, citing simplified test preparation, time savings, and enhanced comprehension of course content.
- Ninety-two percent (92%) of participants expressed high satisfaction with e-learning, highlighting a consistent pattern of positive experiences and contentment.
- Ninety percent (90%) of respondents considered e-learning accessible and convenient, owing to ample technical support, minimal data loss, and easy online content access with few technical problems.
- Ninety-four percent (94%) of participants noted a user-friendly e-learning experience, highlighting its positive impact on their computer skills, particularly when engaging with the LMS.

LIMITATIONS

The data collection was limited to a specific group of students pursuing their PG Diploma in Public Health. Therefore, the study's findings may not be directly applicable to other student cohorts within the same program or to students in different HEIs. The closed-ended questionnaire, which used a Likert-type scale, didn't allow participants to share their subjective opinions about e-learning. During analysis, the "neutral" response on the Likert-type scale was treated as missing data, resulting in some data loss. However, it is important to note that this did not hinder the achievement of the research objectives.

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.

CONCLUSION

In response to the research question, the study unveils the overwhelmingly positive experience of public health graduate 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.

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