LEARNING THROUGH ONLINE PLATFORMS IN THE DIGITAL ERA: EXPLORING CHALLENGES AND OPPORTUNITIES

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Abstract

The incorporation of online platforms within undergraduate education has altered how teaching and learning occur in the digital era. Digital learning environments can present a variety of opportunities and challenges related to student engagement, technology access, and instructional effectiveness. This study explored university students' experiences with online platforms and highlighted the challenges and opportunities within structured academic contexts. Based on constructivism and Connectivism, the research highlighted that digital engagement and learning-centered methods are essential to network learning and knowledge production. This study used a qualitative method, conducted semi-structured interviews and classroom observations of students' engagement in the course with platforms such as Zoom and Google Classroom, with eight undergraduate learners at UMS. The analysis indicated in three main findings: (1) Students enjoyed the flexibility, accessibility to recorded materials to review, the opportunity to pace their learning, and improved time management; (2) some learners reported that motivation decreased and limited peer interactions impaired engagement and satisfaction; (3) technology as a barrier restricted access, with weak internet connectivity complaints, and limited devices impaired participation and restricted deep learning. The results demonstrated the need for balanced synchronous and asynchronous instruction, interactive teaching approaches, support for digital literacy, and equitable access to learning tools to promote inclusive, engaging, sustainable online education.

Keywords: Connectivism; Constructivism; Digital divide; Digital platforms; Online learning; Student engagement.

INTRODUCTION

The digital transformation in the education world has brought new ways of delivering teaching and learning in the 21st century. As societies increasingly depend on technology, higher education institutions are also adding new tools to meet today's students' needs—such as studies of Digital Transformation in Education Environments. The transition from traditional face-to-face forms to flexible technology-supported forms is leading, as seen in the studies we have, which award the material things of a unified information space and a digital living environment (Kryshtanovych et al., 2023; Shenkoya & Kim, 2023). The introduction of digital tools in pedagogical practices, which has been considered evidence of the potential to transform access and construction of knowledge (Mo et al., 2021; Vaskov et al., 2021), places educators under pressure to innovate their work to be able to enhance their practice to a level beyond providing command-guided lessons. This transition is a manifestation of the digital culture that tends to redefine educational practices in relation to new trends (Wang et al., 2021).

Online Learning Platforms Online learning platforms are among the best platforms that provide teaching and learning across the world with minimal physical limitations. Applications such as Zoom, Google Classroom, Moodle, and Microsoft Teams offer features ranging from virtual lectures and

discussion forums to file sharing and assessments. With their varied supports for synchronous and asynchronous modes of learning that are thinness (Liu & Shi, 2023; M. Zhao et al., 2020) oriented to addressing the diverse needs of students, and feedback approaches that can appeal to different learning styles. Suggested by a recognized literature review, online platforms play a significant role not only in preserving participation but also in measuring educator feedback; therefore, they play a part in making education more interactive and, hence, leading to better learning outcomes (Khalil, 2023; Shang et al., 2020). The effectiveness of either is not to be taken lightly, including its impact on students' academic performance and engagement (Zizikova et al., 2023).

Although online platforms offer several advantages in education, some significant problems need to be addressed. Digital tools increase access, especially for students in remote areas and for those with disabilities, enabling flexible scheduling and independent learning (Gerashchenko & Kovalev, 2021; Ndayambaje et al., 2024). Nevertheless, problems such as limited Internet access, a lack of digital skills, and decreased face-to-face communication pose obstacles that may harm student achievement (Salynskaya & Yasnitskaya, 2022). All these problems can defer participation and understanding, which requires a holistic view of the benefits and opportunities, as well as the challenges in creating more effective and fair remote learning environments (Salavatulina et al., 2021).

This study operationalizes student experience as a compromise between (a) the perceptions and assumptions of both the students and the researcher before participating in online classes, and (b) how much they interact with each other about their personal lives and learning activities in an online class. By examining things from their point of view, this research is planned to identify the advantages and disadvantages they bring with them. This research aims to provide specific insights into the skills that educators can develop to enhance their digital teaching practices (Tymoshchuk, 2024). These results are relevant in that they underscore the necessity of incorporating technology into educational experiences by design rather than as a spontaneous measure adopted during the COVID-19 pandemic, when many institutions moved to offer blended or entirely online offerings. As more institutions transition to blended or online-only formats, this research will also offer recommendations for effectively teaching in such environments (Zhang & Ramakrishnan, 2023). It also identifies areas for improvement, such as scale building, platform design, and learner support (Sundaramoorthy et al., 2022). In the end, it helps add to the body of solid information on sustainable, student-centric digital education. Building upon these perspectives, the current study extends the discussion by examining how online learning platforms function beyond emergency contexts

This study operationalizes student experience, even though more and more research on online learning has been conducted, with the majority focusing on emergency responses or temporary solutions. Far less attention has been given to how online platforms fit with ongoing educational practices that outlast such moments of crisis. This paper addresses that gap by focusing on the routine use of online platforms within an educational context. It includes students' perspectives on how effective digital learning was in the long term and the challenges they encountered. Therefore, such a study contributes to the debate on the benefits and disadvantages of digital platforms by absorbing the didactic and psychological components that appeared in this format of online learning (Oliveira & Souza, 2021; Xu et al., 2024). Qualitative data is included as well, which sets this research apart by painting a picture with real experiences. This novelty adds significance and uniqueness to the research.

The study is grounded in the theoretical frameworks of constructivism and Connectivism to emphasize learner-centered approaches in digital contexts. Key aspects of constructivism, as presented by Piaget (1964) and then facilitated by the works of Vygotsky (1978), proposed that learning is a process that leads to building knowledge in an active way through experiences, investigations, interactions, like engagement and exploration (Mo et al., 2021; Oliveira & Souza, 2021). George Siemens (2004), in opposing Constructivism, then proposes Connectivism, arguing that learning is about the relationships and connections formed over networks in a digital environment. It illustrates the importance of accumulating information from diverse sources, including social media, online communities, and digital platforms (Katanosaka et al., 2023). These theories help to explain how they interact with content, peers, and instructors online. This serves as a proper frame in considering the results discussed.

This research investigates how students view and engage with online learning in the digital age and seeks to identify the benefits that enhance education, alongside the challenges that hinder it (Zhang & Ramakrishnan, 2023). The research investigates fundamental elements, including platform ease of use and student motivation, as well as teacher engagement and educational outcomes. The study examines

how these platforms either support or create obstacles to students' academic growth. The study examines how students adjust to digital learning environments while handling their academic responsibilities. The research seeks to gather essential knowledge to inform future educational enhancements. The research serves educational professionals and digital education decision-makers, according to Khalil (2023) and Salynskaya and Yasnitskaya (2022).

The primary focus of this study is to examine students' perspectives and document their genuine experiences when using online learning platforms. The research evaluates technological functions and their effects on learners' emotional states, social interactions, and academic performance. The study specifically examines how students interact with the system, their satisfaction levels, and platform accessibility (Sych et al., 2021). The research results will serve as a foundation for recommendations to enhance online teaching methods and digital facility design. The study examines how educational strategies, together with institutional planning, benefit from its findings (Sundaramoorthy et al., 2022; M. Zhao et al., 2020). The study is grounded in genuine student accounts to maintain its connection to contemporary educational methods. The main objective is to enable researchers to build online learning environments that are both student-centric and inclusive, while also being more effective.

Online education allows students to learn through internet-based platforms, enabling them to access content and interact with teachers from distant locations. Online learning incorporates real-time video classes, recorded class materials, and interactive discussion forums. The digital platforms that host learning activities include Zoom and Google Classroom and Moodle, and Microsoft Teams (Suryaningsih & Pamujo, 2021). Virtual classrooms exist within these platforms to provide instruction alongside communication channels and assessment capabilities (Udoudom et al., 2023; H. Zhao, 2024). Remote education is defined as an extensive term that encompasses all educational activities that take place outside traditional classrooms (Jeny, 2024). The system depends on technological solutions to connect students across distances while maintaining learning continuity (Alsmadi et al., 2021; Chvanova et al., 2023; Ellis & Bliuc, 2015). Understanding these terms helps establish the study framework and define the technological components that support contemporary education (Hongsuchon et al., 2022).

Numerous studies have examined how online education performs against conventional classroom teaching methods. The research shows that properly designed online courses produce learning outcomes that match or exceed those of traditional face-to-face classes (Alshare et al., 2011; Naidoo, 2020). Online learning success depends on effective instructional design, prompt feedback, and methods that actively engage students (Means et al., 2013).The study Prasetya (2023) and other research by Ramadan (2022) show that online learning has become increasingly popular. Various obstacles, such as decreased interaction, technological challenges, and low student motivation, regularly occur in educational settings (Al-Abdullatif & Alsubaie, 2022; Gillet et al., 2022). The absence of direct social interaction with peers creates feelings of isolation among students, which may reduce their learning outcomes (Erianjoni et al., 2023; Jebbour, 2022; Mukhtar et al., 2020). Research indicates that students need to manage their learning independently and possess digital skills to succeed in virtual educational settings (Prasetya, 2023; C. Wang et al., 2021). Online learning success depends on both the digital platform used (Al-Abdullatif & Alsubaie, 2022; Gillet et al., 2022) and the quality of the teaching methods and support infrastructure implemented (Hung et al., 2010).

This research draws upon two important theories: constructivism and Connectivism. Constructivism, developed by Piaget (1964) and later extended by Vygotsky (1978), holds that humans learn by actively engaging in constructing knowledge from experience, reflection, and social interaction (Kwaśnicka et al., 2016). Piaget suggested that as we engage in our environment, we create individual pieces of knowledge, and Vygotsky stressed the social aspect of learning when he introduced the idea of the Zone of Proximal Development (ZPD), which describes the distance between what a learner can do without assistance and what they can learn with some assistance (Kwaśnicka et al., 2016). As an educational notion, constructivism focuses on learner engagement and problem-solving; issues that could be argued to be easier in structured digital learning environments (Chen & Chan, 2024; Naidoo, 2020). Connectivism, as a theory articulated by George Siemens, extends constructivism (Yiping & Zhernovnykova, 2023). Connectivism views learners in a networked, digital world (Zohdi et al., 2024). This supports the focus on technology connecting learners to information, community, and resources outside the classroom and school setting. Online learning platforms such as Brightspace and Moodle align with the key concepts of Connectivism through different ways of interacting with content, tools, and people (Bashkin et al., 2023). The theories of constructivism and Connectivism offer a broader

understanding of how students learn and construct knowledge and interpretations from the tools available in the digital world (Nindhita et al., 2022; Rau, 2014).

A common theme is student engagement in online settings. Research has indicated that, unless learners were involved in potentially collaborative and interactive tasks, engagement would decline, if not directly, when teachers adopted passive content-learning techniques (Alshare et al., 2011; Means et al., 2013; Prasetya, 2023). Another issue is access. For students living in regions with low internet connectivity or limited access to digital devices, this represents a concerning barrier (Wang et al., 2021). This is linked to notions of the digital divide; that is, inequities in access to technology and online programs (Artero et al., 2020; Prykhod'ko et al., 2021). Students from disadvantaged backgrounds often lose access to an online learning environment (Alsmadi et al., 2021; Chvanova et al., 2023; Hongsuchon et al., 2022; Hung et al., 2010). Students are not necessarily homogeneous and can vary in digital literacy, which can also influence their effectiveness in using online educational platforms, potentially leading to unequal learning and higher rates of poor academic performance (Al-Abdullatif & Alsubaie, 2022; Mukhtar et al., 2020; Naidoo, 2020). Addressing these issues is important to create just and equitable digital learning settings (Chvanova et al., 2023; Ma et al., 2023).

METHODS

Research Design

The research design of this study was qualitative, offering a creative and plausible framework for exploring the challenges and opportunities students face when learning online in the digital age. I believe a qualitative approach was appropriate for this study because it offered richer insights into participants' experiences, feelings, and beliefs in their naturalistic settings. Therefore, I was not attempting to generalize the findings, but rather to be able to collect, explore, and describe rich data that identifies the educational process in meaningful terms (Shrestha et al., 2021). This was achieved by exploring how students engage with digital learning tools and how they perceive studying (Rapanta et al., 2020). Digital education has opportunities and barriers. In addition, the qualitative approach afforded me the flexibility to explore participants' subjective experiences, an important aspect of studying motivation, access, and digital literacy (Khofiyya et al., 2024). Lastly, using qualitative inquiry was also appropriate here because the research questions were exploratory in nature (Shrestha et al., 2021), as it enabled the collection of data to be modified and adjusted whilst observing and interacting with participants.

Participants

The research design used for this study was qualitative, focusing on students' engagement in the course through platforms such as Zoom and Google Classroom, with eight undergraduate learners at UMS, and investigated the challenges and opportunities learners face when learning in online environments in the digital age. A qualitative approach offers a more intricate view of participants' experiences, views, and beliefs in their own context, which is more suitable than a quantitative framework, as the aim was not to generalize but to provide thick, rich data to illuminate the educational process. This study investigated how students use the digital learning tools available to them and the extent to which they are aware of the opportunities and obstacles identified by Rapanta et al. (2020) in effective digital learning experiences. The qualitative research approach allowed researchers to pursue an open inquiry and explore subjective experiences, which are crucial when studying education-related topics such as motivation, accessibility, and digital literacy (Khofiyya et al., 2024), and also gave them the flexibility to adjust their course of action based on their participants' responses. Overall, qualitative inquiry was generally well-suited to the exploratory nature of the research questions identified (Shrestha et al., 2021).

Data Collection Tools

The study used two primary data sources: semi-structured interviews and classroom observation. Semi-structured interviews allowed open-ended inquiry while retaining flexibility for double-barreled follow-up, as needed, given participants' responses (Beeson et al., 2019). Interviews lasted 20 to 30 minutes and focused on students' online learning experiences, the tools they used, the challenges they encountered, and the advantages they noted (Chung & Jeong, 2023). Observations identified students'

behavior, engagement, and interaction with content and others during online sessions (Потемкина et al., 2021). These offers contextualized the interview data and triangulated findings (Islam, 2023). Field notes recorded observations of relevant non-verbal interactions and digital attendance. With these two data tools, a fuller representation of online learning was constructed from participants' and observers' perspectives (Sarı et al., 2023).

Data Analysis

The qualitative data from interviews and classroom observations were subjected to thematic analysis for meaning-making. Thematic analysis is a method for identifying, organizing, and describing meaningful patterns in students' experiences of online learning (Torres, 2023). The researcher first read all interview transcripts and observation notes to develop familiarity with the information (Siripongdee et al., 2020). The researcher created initial codes by reading the transcripts and highlighting significant statements, which were later grouped into larger categories or themes. Themes and categories included accessibility, motivation, interaction, technical issues, and student autonomy (Shrestha et al., 2021). The analysis of the qualitative data provided ample opportunities to refine and modify codes and categories to convey greater precision in conveying the views expressed by the participants (Khofiyya et al., 2024). This thematic analysis enabled the researcher to develop a thorough understanding of the challenges and opportunities that online platforms present in the digital learning space.

Data Validity

Various measures were taken to ensure the validity and reliability of the data while in the field and after data collection. Triangulation of data was employed by using multiple data sources to clarify the pattern in the analysis, including comparing classroom observation data with interview data, which established the trustworthiness of the findings across two data sources (Beeson et al., 2019). Advantage was also taken of member checking by requesting participants to review a summary of their interview responses, checking for accuracy, and mitigating other forms of ambiguity through dialogue with participants (Parke et al., 2017). Peer debriefing was also part of the triangulation bona fides, which involved legitimate communication with peers and fellow researchers, scrutinizing the interpretations, and trying to ameliorate selective bias (Torres, 2023). Audit trails were extensive throughout the entire process, including recording the steps taken, the logic of decisions made in coding, and the steps undertaken analytically to ensure open transparency about the study process in general (Siripongdee et al., 2020). Using rich, detailed descriptions of the data reported by the constructed methods would allow readers to judge whether the study findings might be relevant in other settings or applied to other data collection strategies (Lebeničnik & Starčič, 2020). These explicit facets of triangulation enhanced the trustworthiness and reliability of the research findings (Islam, 2023).

Ethical Considerations

This study prides itself on ethical integrity by adhering to academic and professional practice procedures. Before collecting data, we obtained informed consent from each participant in accordance with the stated ethical considerations (Aborajooh et al., 2020). Participants learned about the project, what the study entailed, what was expected of them, and the nature of volunteering. Participants were also given the choice to withdraw from the study at any time without any burden (Atuahene et al., 2024). Pseudonyms were used to protect privacy, especially during the selection of participants for interviews (Grynyuk et al., 2022). During the research process, all documents with personal identifiers were anonymized, and all digital data (audio recordings, transcripts, etc.) were stored in a secure online repository with limited access (Torres, 2023) and identified as anonymous during storage. Additionally, the researcher was responsible for ensuring that participants' responses were treated with dignity and presented honestly in the final report. Ethical approval was received from an institutional review board to confirm that we adhered to all ethical obligations for research with human subjects (Sain & Babiera, 2023).

FINDINGS AND DISCUSSION

This study attempted to clarify the mode of the digital divide, which makes opportunities to learn through online means easier to see than to access. To do this, qualitative data from semi-structured interviews with eight students and classroom observations were used to identify some converging themes. The themes are separated into three areas above: (1) Flexibility and Access, (2) Digital Engagement and Motivation, and (3) Technological Barriers and Learning Challenges. Each theme reflects students' real experiences, attitudes, and behaviors, and, most importantly, what we are seeing in online spaces.

Flexibility and Accessibility

The majority of students valued the convenience of computers and online learning formats, indicating advantages such as time, the opportunity to study from home or wherever they choose, access to recorded material, and the ability to study more effectively, independently, and flexibly, allowing them to manage study and personal obligations more easily. Most students were able to study when it was convenient for them.

S1 said, *"I don't have to wake up early and pay for bus fare. I can just open up my computer and log in to the class."*
S2 said, *"Sometimes I will watch the recording at night when I am more focused."*
S3 said, *"It has helped me fit in studying, studying along with family work. I can do both at once."*
S4 said, *"I feel more relaxed because I can study at my own pace."*

During classroom observations, students were also more punctual in joining online classes than in face-to-face classes. Many students logged in to the class early or on time, likely because it was convenient to stay at home and access the class quickly. Although some students adjusted the time they logged in to class by using instructors' GIS recordings generously and logging in afterward or rescheduling, instructor reports note that attendance increased slightly because of this flexibility. Students were still using screen sharing and chat functions to communicate in online settings, and many accessed recordings of classes shared via Google Classroom.

Digital Engagement and Motivation

While online learning is accessible, students said they often struggle to maintain motivation and focus. They indicated that they multitask, use social media, or become bored during long online lectures. They also mentioned missing in-person engagement and reported feeling isolated during online classes.

S5 said, *"In face-to-face classes, I'm more engaged. Online, I scroll on my phone sometimes."*
S6 said, *"I feel like I'm not in class. I just stare at a screen."*
S7 said, *"I'm missing talking to friends or doing group work."*
S8 said, *"Sometimes I feel like I'm sleepy - or distracted. If the teacher talks too much, I fall asleep."*

My classroom observations suggested that when students had a long lecture, they were much more passive participants. Most students had their cameras and microphones off, and many did not respond when the teacher called. It was only when teachers engaged students, either with breakout rooms, games, or instructed to respond with yes or shake their heads, did students displayed more active and engaged participation. While these activities supported student focus, when teachers just led lectures and had traditional engagement, the students did not engage themselves in being engaged.

Technological Barriers and Learning Challenges

Many students reported that they experienced technical issues that harmed their socio-emotional learning. Technical issues included inadequate internet service, using a device that was shared with outdated software, or home environments that were noisy. Sometimes, tech issues impacted whether students were able to attend some lessons or fully participate (all too often), which contributed to stress and missed content.

S8 said, *"Sometimes my internet goes out and I miss a big part of the lesson and also the internet so bad I don't like this when my lecture the class go to be online."*
S3 said, *"I share a phone with my sister, so sometimes I can't get on, and often I join in the class late."*

S4 said, *"My house is noisy. I can't focus or talk during the class; my mind can't catch what they talked about."*
S6 said, *"I was in the middle of answering it when the connection dropped, sometimes still like that until I finished the class."*

The teachers were more often interrupted due to students dropping out or lagging due to poor connection issues. During a few instances, students sent a message to the teacher that they could not attend class due to technological issues. Teachers also noted occasions when students asked for a repeat of an explanation, perhaps indicating they had missed important prior moments due to internet issues. Streaming glitches in audio and video were particularly troublesome during group work and class discussions.

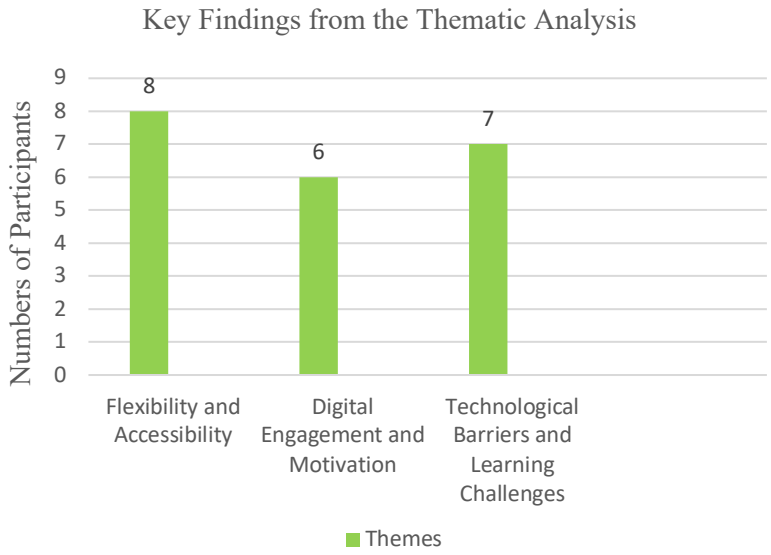

Figure 1. Illustrates the frequency of student responses across the three primary themes identified through interviews and classroom observations

Figure 1. Illustrates the frequency of student responses across the three primary themes identified through interviews and classroom observations. *Flexibility and Accessibility* were the most frequently mentioned themes, with eight participants emphasizing the benefits of studying from home, accessing recorded materials, and balancing academic and personal responsibilities. *Technological Barriers and Learning Challenges* were also commonly reported by seven students, who described issues like poor internet connectivity, device sharing, and noisy environments that disrupted their learning process. *Digital Engagement and Motivation* was noted by six participants, reflecting students' struggles with maintaining focus, feelings of isolation, and reduced classroom interaction during online sessions. The chart highlights how students found online platforms convenient but still faced significant motivational and technical challenges that impacted the quality of their learning experience.

DISCUSSION

This study examined how students interact with online learning platforms in this digital age and pinpointed three areas of concern: Flexibility and Accessibility, Digital Engagement and Motivation, and Technological Barriers and Learning Challenges. These conclusions are analyzed through the theories of Constructivism and Connectivism, supported by relevant prior studies.

Flexibility and Accessibility

The students appreciated the option to study from home because it allowed for time management and the option of revisiting recorded lectures. This is in accordance with Piaget's Constructivist theory, which states that students need learner independence and self-directed study. Students molded learning to fit their pace and their surroundings. Vygotsky's learning theory also strengthens the importance of the surroundings in effective learning. As cited by Siemens (2004), and Regmi and Jones (2020) from a

Connectivist angle, learning happens in networks and is facilitated by information and digital connections. Students demonstrated network building that fostered self-directed learning by interacting with the course materials asynchronously and obtaining learning resources on their own time. This is also in agreement with previous studies by (Barrot et al. (2021) and Soffer et al. (2019) which showed that digital platforms enhance learner autonomy and accessibility. Pilco et al. (2022) noted similar findings, stating that students appreciated the time efficiency and personal convenience offered by digital tools.

Digital Engagement and Motivation

Although online platforms have flexibility, many participants expressed challenges with maintaining attention, motivation, and connection. This theme fits squarely with Vygotsky's theory of social learning, which states that students learn most effectively when interactions are supported and guided with peers and through social collaboration. Simply having live moments and colleagues in the rooms decreased interruptive collaboration by developing social connectivity. Instead, students developed feelings of isolation and lost feelings of motivation, especially when examining lecture-rich or other passive learning experiences.

Connectivism also emphasizes the nature of interaction with learning. If students are not exploring the meaningful connections with peers or instructional presenters, the opportunity to learn through a digital experience is fragmented. Garrison (2021) discussed how student engagement in an online environment improves based on practices in how an instructor designed for interaction and participation, and not only for content delivery. Similarly, O'Doherty et al. (2018) described the value of integrating collaborative tools and real-time interactive discussions to create conditions that maximized participation. The extremely similar findings corroborate this study's engagement improvement when teachers engaged participants to use breakout rooms or managed strategies for interactive questioning.

Technological Barriers and Learning Challenges

The third theme recognizes how limitations of the environment - unpredictable internet access, sharing devices, and poor conditions for learning had negative impacts on students' experiences. According to Constructivist theory, learning is contingent on the surrounding environment being quality and rich. When students have limited access or are in noisy conditions, they will not be fully engaged, which hampers the knowledge-building process.

Connectivism indicates that students will learn as long as they are connected to the network. When students do not have access to reliable digital means, they do not have access to content or peers. Paetsch and Drechsel (2021) similarly noted that digital inequity is a contributing factor to disengagement and learning delay. Laksana (2021) and Chvanova et al. (2023) Likewise noted the poor potential of infrastructure and the lack of digital resources are noted as factors in widening the achievement gap in resource-limited environments. (Wang et al., 2021) wrote: "the extent of digital exclusion...due to the lack of internet access or a suitable device has a detrimental effect on a student's learning outcomes."

To sum up, this study shows that online platforms can bring valuable benefits, but online platforms also carry unique challenges that both influence engagement and learning outcomes. Constructivist and Connectivist theories were useful for understanding both a value and a challenge, and ultimately emphasized an online environment that is learner-centered, that is interactive, and designed to be accessible. The findings are consistent with previous studies and concurrently support previous studies. Regardless of the context, there is a need for intentional design as well as equitable access in digital education.

Table 1. Summary of Discussion Themes

Theme	Key Findings	Related Theory	Supporting Studies
Flexibility and Accessibility	Students valued studying from home, managing their time, and revisiting recorded lectures.	Constructivism (Piaget, Vygotsky) Connectivism (Siemens)	Barrot et al. (2021), Soffer e (2019), Pilco et al. (2022)
Digital Engagement and Motivation	Students struggled with focus and motivation; engagement increased with interactive strategies.	Constructivism (Vygotsky) Connectivism (Siemens)	Garrison et al. (2021), O'Doherty et al. (2018)

Theme	Key Findings	Related Theory	Supporting Studies
Technological Barriers and Learning Challenges	Unstable internet, shared devices, and poor learning environments hindered participation.	Constructivism (Environmental richness) Connectivism (Network continuity)	Paetsch and Drechsel (2021), Laksana (2021), Chvanova et al. (2023), Wang et al. (2021)

CONCLUSION

This study examined students' experiences in online learning by utilizing digital platforms, specifically the opportunities and challenges they faced during this digital era. To identify opportunities and challenges, qualitative data (interviews and classroom observations) identified 3 major themes: Flexibility and Accessibility, Digital Engagement and Motivation, and Barriers of Technology and Learning Challenges. The results highlighted both areas of online education to benefit: autonomy and convenience, reflected in areas of challenge such as limited engagement, motivation, and technology resources.

The findings are significant to ensure that online educational pedagogies are consistent with technological inclusivity. Students appreciated the convenience of utilizing an online platform; however, engagement and learning were often challenged by distractions and isolation, and access. Rooted in constructivist and connectivist theories, the conversation highlighted that significant learning in digital environments necessitates active participation, social engagement, and sufficient technological assistance. As educational institutions continue to go digital and integrate digital platforms that become more widely used, addressing the digital divide and preparing teachers to teach online is vital. Centering on student design and support pathways can help provide effective, inclusive, and ultimately sustainable online learning environments. This study is part of an increasing body of literature focused on digital educational modes and identifies several important areas for product and policy development improvement.

Although this research provides important perspectives on students' experiences of online learning platforms, there are some limitations that must be recognized. This study only involved eight students from one university, limiting the generalizability of the findings. The qualitative design, while providing depth, introduces subjectivity due to potential bias in students' responses and the researcher's interpretation, even though triangulation was used to minimize it. In addition, this study focused solely on student perspectives and did not include teachers or administrators whose views might offer broader institutional insights. Factors such as students' socioeconomic background, technological access, and prior experience with digital tools were not examined, yet these aspects may influence engagement and learning outcomes. Future studies should also explore emerging technologies and compare various online tools to better understand their impact on learning.

Based on the findings and limitations of the study, we make the following recommendations for future research and educational practice. Larger and more diverse groups across multiple universities are encouraged to strengthen external validity. Educators and administrators should be included in future research to provide more comprehensive perspectives. Universities are advised to enhance online learning interactivity through collaborative tasks, polls, and breakout rooms; invest in digital infrastructure; and provide digital literacy training for both students and teachers. Balanced approaches that combine synchronous and asynchronous learning, alongside emotional and social support structures, can foster inclusion, reduce isolation, and improve motivation. Overall, addressing these areas can help develop sustainable, engaging, and equitable online learning environments. Overall, the study implies that effective and sustainable online education requires not only technological infrastructure but also continuous pedagogical innovation, digital inclusion, and emotional support. By addressing these aspects, universities can ensure that online learning remains accessible, engaging, and equitable for all learners in the digital age.

ACKNOWLEDGMENT

The authors would like to thank all those who contributed to the completion of this research. Also, thanks a lot to colleagues, lecturers, and mentors in the field of the Department of English

Education, Faculty of Teacher Training and Education, Universitas Muhammadiyah Surakarta, for their valuable notes and encouragement during the research process.

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