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SOME INSIGHTS INTO COMMUNICATION DESIGN STUDENTS' E-LEARNING EXPERIENCES DURING THE COVID-19 PANDEMIC IN A UNIVERSITY SETTING

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ABSTRACT

During the COVID-19 pandemic, institutions were forced to shut down and adopt online tools for teaching and learning. In the context of design faculties, the quest to equip students with practical skills demanded an e-learning experience that was robust and similar to in-person lectures. Though studies have been done on different aspects of e-learning during the COVID-19 pandemic, the online learning experiences of design students have not been explored extensively. This study, therefore was aimed at exploring design students' experiences with e-learning during the COVID-19 pandemic using Activity theory as a lens. The study used a focus group discussion with twenty-five students who were grouped into six. The data gathered were thematically analysed. The findings showed that the students were mentally prepared for online learning due to their prior exposure to the internet before the pandemic. Thus, students could use the online tools very well with little assistance from lecturers and their colleagues. Thus, students' preparation, innovative thinking for solutions, lecturers' guidance, the use of social media tools along mainstream e-learning tools and colleagues' support were successful factors for the communication design students' positive practical experience of e-learning during the COVID-19 pandemic. Notwithstanding the positive experiences, some challenges were encountered by the students, which included high data cost, high data consumption by some of the e-learning tools, screen fatigue as well as poor connectivity disrupted the flow of some of the virtual lessons.

Keywords: E-learning tools, screen fatigue, COVID-19 pandemic, innovative thinking

INTRODUCTION

The advancement in Information and Communication Technologies (ICT) in the educational sectors has greatly impacted the delivery of teaching and learning in higher educational settings, where there has been support for acceptance of learning through digital technologies. Scholars agree in framing e-learning and online learning as being a transformational learning environment where instruction is delivered through digital devices to support and promote learning activities in a given academic programme (Clark & Mayer, 2011). Learning online allows flexibility in accessing teaching, learning, and research materials through the use of digital devices without limitations in time and place. Hence, the learning needs of students are transformed through technology-enhanced learning, which is claimed to fill many gaps in traditional classroom instructions (Kim & Park, 2018; Haleem *et al*., 2022).

However, Smith (2005) advances that the requirements of online learning should not be hinged only on the availability of digital technologies but significantly, learner-specific skills and self-efficacy for online learning. With many higher education institutions adopting an immersive e-learning environment, students have the opportunity to access education online without the perceived barriers of face-to-face learning modes, however it comes at a cost. Sandybayev (2020) affirms that setting up an e-learning system in a traditional higher-learning environment requires extensive, complicated, and methodological systems. These range from setting up infrastructure, content development, staff management, continual research relevant to the needs of the learning institution, training and support for instructors, stakeholder motivation, systems automation, monitoring, and quality assurance at all levels (Gillett-Swan, 2018) as well as equipping students psychologically. With student-centeredness at the heart of e-learning, a lack of these considerations would greatly impact negatively on the experiences of students (Gillett-Swan, 2018). Beyond these considerations, the attitudes of students affect the success of learning online. Where students are enthusiastic and optimistic, they are likely to achieve academic excellence through e-learning with minimum barriers (Hazwani *et al*., 2017).

In a study on students' experiences towards the quality of online education, Yang & Cornelius (2004) observed that students' experiences were negative as a result of lack of instructor presence as well as lack of self-regulation by learners. Challenges presented in studies on distance learning include disparities in the quality of learning instructions, unequal access to the key educational technologies for students from remote distances, and the preparedness of students to engage these technologies (Ratliff, 2009). Adnan (2020) noted that students found face-to-face learning to be beneficial and expressed the difficulty of fulfilling online group projects. Challenges with the use of technology also undermine the overall experience of learning online, therefore, in developing countries, access to unrestricted internet is essential to students' learning experience in online learning environments (Ratliff, 2009). In order to counter these challenges, Stecuła and Wolniak (2022) propose that applications of technology in education should move beyond the use of devices to encompass the precise application of resources through appropriate pedagogies with the ultimate goals of knowledge and skills transformation. Stecuła and Wolniak (2022) add that using appropriate technologies and approaches will make knowledge and skills transformation achievable to complement educational processes through a responsive-instructional framework, modernized technology, the presence of dedicated staff and efficient management. Within these provisions, student engagement with e-learning is bound

to come with rich transformative experiences in their academics to encourage them to accept online delivery of instruction.

The shift towards the adoption of e-learning into tertiary education especially in design education was not fully embraced by many institutions till COVID-19 surfaced, which compelled higher education institutions across the globe to adopt a blended learning and or distance learning model (Smalley, 2020). In response to the health challenges of COVID-19, virtual learning environments became the trend for all schools. However, Shahzad *et al*., (2020) noted that there was a gap in the motivation and psychological cognition of students who have to embrace e-learning as a result of the COVID-19 pandemic's psychological experiences. Scholars observed that experiences from the global health crisis led to lower academic motivation in adolescents (Turner *et al*., 2020). This experience was identified as a result of a lack of readiness for learning online (Wang *et al*., 2022). Thus, the significance of learner motivation in online learning environments is warranted as a key factor (Khalilzadeh & Khodi, 2021). Chung *et al*. (2020), reported that students were generally ready for online learning in the context of Malaysian higher education. This experience was however, different in Yogyakarta in Indonesia based on Widodo *et al*., (2020) observation, which showed a lack of learning readiness among students. On students' expectations and experiences during the pandemic, the impact of the COVID-19 health crisis on Ghanaian students' learning was reported as negative (Owusu-Fordjour *et al*., 2020). Moreover, students' perception of accessible virtual educational tools was stated as low in research by Rahiem (2020) and Almomani *et al.*, (2021).

Other studies conducted amidst the pandemic showed that students did not have much conviction about the change in their educational actors and the educational prospects offered online (Villa *et al*., 2020). Schunk and DiBenedetto (2020) assert that there are likely alterations in the cognition and motivation of students when their physical, psychological, or educational environment is distorted. With the effects of the pandemic on higher learning, student motivations and psychological preparedness were impacted severely as a result of intensified stress, lack of motivation for learning, and reduced capacity for self-regulation (Usher *et al*., 2021; Schunk & DiBenedetto, 2020). These challenges of e-learning call for a sustainable response to teaching and learning that can mirror the claim that face-to-face learning offers, which are motivation, fostering communal belonging and providing reinforcement for students' engagements (Kemp & Grieve, 2014; Paul & Jefferson, 2019). This study, therefore, was aimed at exploring how communication design students experienced e-learning during the COVID-19 pandemic.

Activity Theory: A framework for understanding students' experience of e-learning during the COVID-19 pandemic

Activity theory is a framework that helps to explore and analyse how actors involved in an activity interact with different elements within a given activity and how they experience the activity (Engestrom, 2001). The theory is made up of the subject, tools, rules, community, division of labour, and object, which interact to produce an outcome (Stetsenko & Arievitch, 2004) as captured in Figure 1. In the Activity theory, the subject refers to the key actors involved in an activity, the tools refer to the instrument used by the actors in an activity, the rules give the regulations that guide an activity, the community refers to supporting actors in

an activity, the division of labour shows the different tasks done within an activity by the community of actors and the object refers to the piece of work produced from an activity by actors. The challenges in an activity that makes achieving a goal difficult are termed tensions (Engestrom, 2001).

The outcome is the ontological relations or the personal or collective experience developed from reflection and refractions on an activity. Thus, from an outcome perspective, an activity is regarded as a phenomenon, where doing and becoming are inseparable. Activity theory was thus, employed to explore how the design students experienced e-learning tools for learning design-inclined courses during the Covid-19 pandemic in a university of technology.

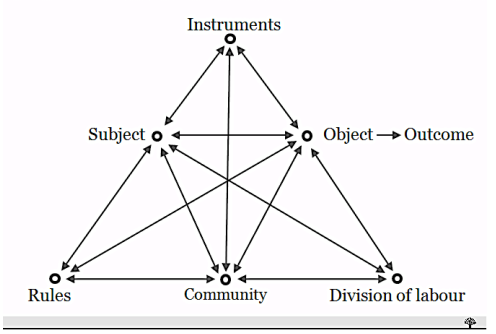

Figure 1: Activity Theory (Engestrom, 2001)

METHODOLOGY

This research employed a qualitative or narrative approach. This approach was adopted because the research aimed to obtain research data through focus group discussions. Twenty-five student participants from the Communication Design Department at the Faculty of Art, Kwame Nkrumah University of Science and Technology were purposefully selected based on their involvement in the e-learning classes during the COVID-19 pandemic. They were also selected based on systematic sampling using their class list and also based on their availability at the time of the research. The students were selected from the strata of their specialisations which were Visual Communication Design, Multimedia Design and Advertising and Media Design specialisations. The students were then grouped into six. Each focus group was supported by one researcher facilitator during the focus group discussions. A semi-formal discussion guide was used for the focus group interactions.

The discussion protocol or question guides were developed based on the Activity theory framework. The discussions were recorded and transcribed word for word. The transcribed data were shown to the focus group participants for member-checking to validate the data. The data were analysed thematically and through Activity Theory. Activity Theory was used because it helped to explore and analyse how various activities were carried out with a focus on the interaction between activity participants, their tools and how their aims were achieved. Thus, the Activity Theory was used for conceptualizing the experiences with the e-tools to serve as a blueprint for e-pedagogy for design courses in the future or for pandemic situations.

RESULTS

The results from the research were categorised based on the Activity theory units. The units are subjects (Communication Design students), Tools (e-learning computer applications), Rules (regulations observed by the students during e-learning class), Community (the groups formulated for projects), Division of Labour (different tasks performed by group members in a project), objects (the designed piece produced at the end of the day) and the Outcome (the

gained skills acquired through the e-learning processes). The key relevance of the theory is basically to explore and analyse how the subject(s) interact with the different units in the Activity theory and how it translates into the object.

Communication design students' preparedness towards e-learning during the COVID-19 pandemic

To explore the preparedness of the Communication Design students towards e-learning during the COVID-19 pandemic, the student's prior knowledge about e-learning, prior motivations, envisioned opportunities and challenges were explored. Under the knowledge, most Communication Design students indicated that they were familiar with e-learning tools before the COVID-19 pandemic emerged. Some e-learning tools they were using were Domestika, Skillshare, Skype and Zoom. Few students were aware but had not engaged in e-learning actively until the pandemic emerged. These are some of the comments shared by the students:

1. "*I used to engage in e-learning before the COVID-19 pandemic.*"
2. *"I had heard of e-learning, but I came to understand and use it more during the pandemic."*
3. *I was used to Skype for online meetings with colleagues so I was used to e-learning before the pandemic."*

The comments make it clear that most students were already engaged in some form of e-learning and adopting the use of e-learning during the COVID-19 pandemic was not challenging since most had developed their capacity.

In the space of prior motivations before COVID-19 about e-learning, the students expressed that due to the lecturers' approach to student-centred learning, most of them were instructed to learn computer applications for design on their own. Thus most students started learning about design application usage from diverse online learning platforms such as YouTube and Udemy as well as exploring the use of Google Classroom on their own. The introduction of the student-centred learning approach invariably by the lecturers was critical in equipping them to overcome the unprecedented challenges caused by the COVID-19 pandemic. In the context of psychological preparedness, it became clear that since most of the students were not new to e-learning, especially in the context of a Technical University, the students were more aware of the possible challenges that may crop up in the usage of e-learning tools. For instance, one participant in one of the groups expressed the view that he was anxious about connectivity challenges due to his previous encounters with e-learning tools. In the space of envisioned motivation of opportunities, most of the students felt at ease when the need for the University to go online was announced to the students. Some students commented that the fact that they could stay home and join the class online and even have access to recorded versions later was quite encouraging for them to embark on online learning since it was very convenient.

Communication Design student's experience with e-learning Tools

The students' experience with the e-learning tools covers the types of e-learning tools used during the COVID-19 pandemic, what the tools were used for, the challenges they encountered with the tools as well as how they overcame the challenges. The students worked with e-learning tools or applications such as WordPress, Google Classroom, YouTube, Google Teams, Skillshare and the KNUST Virtual Classroom. According to the students, WhatsApp was also used for their

e-learning by sharing ideas with colleagues as well as showing designed works to lecturers and colleagues for comments. The students added that the Zoom application helped them to have lectures and practical guidance that mimicked the face-to-face classroom situations during lectures. They further expressed the view that they shared their screen during practical online lessons with lecturers and colleagues through Zoom and Google Classroom applications for better student-lecturer interactions on students' designed works. They also added that assignment submissions and assessments with corrective feedback on students' works by lecturers were also done through the WhatsApp application. The WhatsApp application gave them easy access to discussions of online lesson challenges that emerged from the Zoom lectures and also to students' peer-to-peer discussions on projects.

Though most students had positive experiences with the use of the e-learning tools, some also encountered challenges. These challenges were labelled as tensions in Activity theory. The students shared that using Zoom to play video was very difficult. There were challenges with the audio which affected the flow of understanding the lecture being relayed by a lecturer. The need to be online most of the time triggered visual fatigue, making it difficult to concentrate. Others shared that their monitor screen's light affected their eyes and triggered medical challenges. For others, the Virtual Class software was difficult to navigate their way through because they did not have prior knowledge of its usage. The high usage of data and weak internet connectivity were the major challenges shared by most of the students.

Due to the ingenuity of some students, they were able to overcome the challenges posed by the e-learning tools. Overcoming the challenges encountered from the Activity theory perspective is termed expansion. These are some of the comments shared by the students to show how they overcame some of the challenges:

1. *"I consulted some of my friends for solutions on how to use the e-learning tools."*
2. *"I used orientation videos from YouTube to learn how to use the V-Class (Virtual Classroom Application) for sending files and taking quizzes."*
3. *"I watched the tutorial videos on how to use the virtual classroom."*

These solutions show that most e-learning challenges relating to tool usage could be overcome through the use of tutorial videos.

Rules observed by the students in the space of e-learning during the online lectures

One aspect of e-learning that is critical is the rules that are to be observed as an act of discipline. Without it, e-learning may not be effective. To ensure that the students were fully informed about the e-learning set of rules, the students disclosed that there was a video presentation telling them about the regulations they were to observe in their virtual classrooms. For example, it was shared that they were instructed to dress properly and also check their backgrounds to ensure that there were no inappropriate objects. They were also instructed to use the right "emojis" for raising hands to draw the attention of instructors to gain permission for any form of contribution in their virtual classrooms. The regulations were basically about how the students were to present themselves, how to use the right tools for effective communication and also how to observe e-learning manners for effective learning.

Working together with lecturers and colleagues through e-learning platforms

The students worked together with other colleagues through different e-learning platforms as a means to deepen their understanding of topics taught by lecturers and also for group discussions and group projects. All the various different interactions among the students within the Activity theory perspective were situated within the Community and Division of Labour units. Most students shared that the function of screen sharing in virtual platforms such as Zoom or Teams was very useful because it enabled them to work on projects as a team by showing design projects to colleagues and lecturers for inputs as captured in Figure 2. Other students commented that the WhatsApp application was used to deliberate on the work of a team for cross-pollination of ideas on how the design project would be done. Some also added that the Telegram social media application was used for submission in cases where they encountered challenges submitting through the school's virtual classroom portals.

Figure 2: Communication Design students' online interactions with colleagues and lecturers on their design projects

The outcome of e-learning experiences: Communication Design students' comments

These were some of the comments shared by the students regarding their overall experience with e-learning:

1. *"I learnt new ways of sharing works with fellow designers. For example; the new Adobe cloud system enables me to share work with the international design body for input."*
2. *"The e-Learning helps me improve my design skills. It motivated me to improve my design skills and also learn more from the larger community* out there.*"*
3. *"Getting new information and new people to learn from were the two major benefits I received from e-learning and these made me conscious of a larger community of designers ready to support me in any form."*

These final comments show that when e-learning is made student-centred, it becomes ideal for self-awareness and self-development in online learning. It also gives them access to recorded lectures for an in-depth understanding of topics treated in their virtual classes.

DISCUSSIONS

The subjects who were Communication Design students were prepared based on their comments. Most of them were familiar with e-learning tools or platforms before the COVID-19 pandemic emerged because the institution was promoting the use of e-learning to support the students to engage in new ways of learning with technological tools. The communication design students were, therefore fully equipped and embraced e-learning during COVID-19 which contradicts the research findings of Wang *et al*. (2022), which indicated that there was low motivation for e-learning due to a lack of readiness for learning online. The findings of this research confirmed the findings of Widodo *et al*., (2020), who affirmed that students in Malaysian higher education were generally prepared. There were envisioned challenges or tensions in the use of online learning tools in research by Rahiem (2020) and Almomani *et al.*, (2021), which is affirmed in this research but students' awareness empowered them to develop a way to overcome the challenges during the online learning. The outcome by implication shows that some higher institutions are amply equipped with the use of technological tools for learning.

The Communication Design students' experience with online learning tools during the COVID-19 pandemic shows an innovative use of different online tools and social media platforms to mimic face-to-face experience in teaching and learning. The innovative use of different online learning tools generated enthusiasm and optimism as outlined by Hazwani *et al*. (2017). The use of screen sharing in Zoom and Teams online applications also generated a similar face-to-face experience that created an environment for sustained learning. The presence of lecturers during the online lessons during the COVID-19 pandemic created positive learning experiences and outcomes and, therefore, supports the research findings by Yang & Cornelius (2004) who observed that students' online learning experiences were negative as a result of lack of instructor presence. It is, therefore, obvious that the online learning approaches that just upload learning materials for students to use or interact with are not effective as compared to those with lecturers present in online classrooms to lecture the students live. This is especially so in the context of design where there should be close monitoring and guidance from lecturers and lead colleagues in design. The innovative use of online learning tools by the Communication Design students served as the panacea for their sustained engagement in online learning that helped them to work in groups via online tools such as Zoom and Teams applications. The convenient and innovative uses of online tools are therefore, cardinal sustainable factors in teaching and learning for students' holistic online positive engagement (Kemp & Grieve, 2014; Paul & Jefferson, 2019). The other factor that sustained the students' interest and engagement was the online group work projects that were done and critiqued by the students themselves through the online platforms. Group design work or project is, therefore, essential to drive skills development for online positive learning experiences.

On the front of tensions or challenges encountered by the students in online learning during the COVID-19 pandemic, it was noticed that long hours online triggered

visual fatigue, which led to poor concentration and affected the involvement of students in the online lectures. The other challenges were technical issues, which were shallow skills that made it difficult for some students who were not active in online lessons to encounter difficulties in using some features of the online tools for learning. The notable challenges were not directly linked to the usage of the online learning tools but rather access unavailability as a result of weak Internet connectivity, and expensive Internet data for access.

LIMITATIONS

The population of the studies were Communication Design students who were mostly conversant with most of the online learning tools and, therefore, were exposed to e-learning before the COVID-19, which was likely to influence their experiences. It implies that due to their prior e-learning experiences, a baseline assessment of e-learning experiences was needed to ascertain their true experiences during the COVID-19 pandemic. The other limitation was that this study did not explore the nature of the e-pedagogy used by the lecturers during the pandemic, which is likely to serve as an intervening variable in e-learning on the side of the students but rather focused only on the experiences of the Communication Design students through their interaction with tools, rules and the community in online learning through the lens of Activity theory. Further research can be conducted using the limitations as a research focus in the future.

CONCLUSION

The approach of student-centred learning embraced for teaching problem-based projects advances the need for students to search for inspirations, which nurture the alternative thinking ability of Communication Design students and serves as a pillar for the easy adoption of e-learning tools and environments for studies when COVID-19 pandemic emerged. It is also clear that the forecasting of the University for adopting technology for sustainable education also served as a springboard for equipping the students for e-learning. The students, therefore, engaged in online learning mentally prepared and were also guided by their lecturers and assisted by their colleagues in their group design projects. The preparedness, innovative thinking, solution orientation, lecturers' monitoring and colleagues' support served as successful factors for the positive experience of e-learning encounters by the Communication Design students during the COVID-19 pandemic. However, there were challenges of high data cost, high data consumption by some of the e-learning tools as well as poor internet connectivity, which disrupted the flow of the virtual lessons. These challenges can be minimised when telecommunication companies support e-learning in higher education through low tariffs education-focused bundles for students for specific e-learning platforms such as Zoom, Google Meet and Microsoft Teams.

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