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equity in diverse post-pandemic
teaching contexts**

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E-learning for student support, inclusion and equity in diverse post-pandemic teaching contexts

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Abstract

Prior to the onset of the global lockdown, some educators used strategies such as a flipped classroom, blended learning and hybrid learning to integrate technology into the delivery of their modules. This all changed in 2020 when, due to the spread of the COVID-19 virus, contact sessions were no longer an option. Both educators who partially used e-learning avenues and those who used only contact teaching had to convert to full online teaching. The pandemic alerted us not only to the progress we have made, but also to how far we still need to go to equitably address access and inclusion among students in higher education institutions.

The purpose of the study was to explore the extent to which the partnership between e-learning specialists and educators could foster student support for inclusion, access and equity in higher education – thereby enriching teacher education. This qualitative study with an action research design involved one educator and one e-learning specialist who worked with 110 students across two modules. Affordance Theory served as the theoretical framework for the study. Thematic analysis was used to arrive at the salient points and learn lessons from the partnership.

The study revealed that educators' access to information and technical support allowed them to create supportive learning environments for students. Furthermore, using multiple modes of engagement diminished the probability of diversity being an aggravating factor. Academics must create awareness among students on the support interventions available in institutions.

Keywords: E-learning, support, access, equity



Introduction

The call by the World Health Organization (WHO) for urgent action to curb the spread of the COVID-19 pandemic (WHO, 2020), and the consequent lockdown changed the mode of operation of most higher education institutions (HEIs) from full contact or hybrid to fully online. HEIs attempted to ensure minimal disruption to teaching and learning, and no interruption in students' progression. Continuity was vital for student success, but this came with its own challenges. Support was needed for both educators and students. For educators who already operated the flexible hybrid learning mode, the transition to full online teaching was an exciting learning curve as they could build on existing knowledge. Educators who still operated in the full contact mode had more difficulty adjusting to the demands of the fully online platform (Mishra et al., 2020). They required support with the intricate operations of the learning management system (LMS) and in keeping up with the new trends and applications introduced regularly. Educators were not the only ones affected – students also had to adjust to online learning. HEIs had to introduce rapid response initiatives to support educators and students. Students had to be accommodated and supported, and in some instances, their individual needs (based on background, social context and financial status) had to be considered.

This paper reports on the partnership and collaboration between an educator and an e-learning specialist /instructional designer at an HEI to maximise the offerings of the LMS to optimally support the diverse students and ensure equity and inclusion. The study explored the extent to which this partnership between an e-learning specialist and an educator managed to foster student support and facilitated inclusion, access and equity in higher education.

LITERATURE REVIEW

Student support, inclusion, and equity

The impact that the COVID-19 pandemic and the different stages of lockdown had on the education sector has been enormous. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), about 1.5 billion students in 165 countries were affected (United Nations, 2020). To address the physical

challenges of the lockdown, HEIs moved to online teaching and learning. However, other challenges such as integrity, equity, inclusiveness, fairness, ethics and safety all had to be factored into their response. Students' access to content was compromised by their contexts, such as their location and the availability of basic infrastructure such as computers, internet connectivity and data. This reality reinforced the assertion by Roulstone (2016) that although technology could create meaningful engagement and participation in the teaching and learning process, students could well be alienated where there is inequality. Khalid and Pederson (2016) concurred and further state that the issue of accessibility also extends to acceptable internet connectivity and bandwidth. The latter services are often lacking when students are located in remote environments.

Universal learning design (UDL) focuses on the student support system that can bridge the gap created by transactional distance due to physical separation of the educator and students (Zeff, 2007). The guidelines of UDL emphasise inclusivity, equity and support to ensure access to all students, without compromising the quality of learning (Behera, 2021). While the extraordinary growth in the use of technology in education has provided many opportunities, it also poses challenges that are still evolving in the face of the realities created by the COVID-19 pandemic. Modise (2020) argues that the diverse nature of the student population and the need to satisfy their demands and support them require further research.

Teaching and Learning model

Educators, on their part, are confronted by challenges of their own, such as embracing institutional teaching and learning models, mastering the use of learning management systems, and ensuring quality and inclusivity (Farhana et al., 2020). The process of guiding students to successfully complete modules and programmes has become quite daunting with the total shift to e-learning. Institutional infrastructure came under scrutiny and, in some cases, had to be upgraded to meet the new demands. Educators' professional development so as to fully grasp new skills became paramount for students' success, and many new training opportunities had to be provided. Novel assessment and accommodation options also had to be explored on a continuing basis. Educators were expected to make additional effort to ensure that students would embrace learning experiences as varied, exciting and engaging.



The findings that emerged from the study by El Firdoussi et al. (2020) resonated with those in many other studies. Their research, which involved 3 037 students and 231 professors in Morocco, explored the limitations of e-learning platforms during the COVID-19 pandemic. They found that educators (and students) grappled with technical issues, they had limited skills to operate effectively on digital platforms, electronic devices were very expensive, and these devices took a toll on students' overall wellbeing.

The training workshops provided by HEIs through online means allow educators to upskill themselves. Though time-consuming in most instances, the alternative to engagement has been too dire to contemplate. The United Nations' Sustainable Development Goal 4 (SDG 4) calls for inclusive and equitable quality education and lifelong learning opportunities for all by 2030. It is crucial that students feel included in the education system and that education institutions support this goal to allow more people access to education. Set graduation requirements guide educators in aligning the content they intend to teach with what the training institution expects of them.

The training for educators ranges from an overview of the learning management system to assessments and grading, and various tools and modalities are used to augment student participation. The training workshops provided for educators and offered by e-Education staff include training for the administration of LMS, as well as creating digital lectures, assessment, modalities for participation, grading and feedback. Student support plays a significant role in enhancing students' success, and therefore educators are encouraged to set high expectations for the students, but also to support them to meet those expectations and the outcomes set in the study guide. Academic support is most effective when it is connected to and/or contextualised within the specific course for which support is required. Harris et al. (2016) feel strongly that students should be supported in learning trajectories so they can finish the programmes, and Yukselturk et al. (2014) agree that attrition should be mitigated in higher education to stimulate success and retention. Finally, e-learning for student support, inclusion and equity requires the parties involved to be aware of the opportunities available, the necessity to engage and the potential inherent challenges.

THEORETICAL FRAMEWORK

Affordance Theory was the framework adopted for the current study. According to James J. Gibson (1977, 1986) founder of the theory, Affordance Theory is defined as the possibilities for action. Within any particular environment, the affordances are referred to as what that environment offers to those that exist there, irrespective of whether or not the observer recognises these opportunities. Affordances exist independently of people's perceptions, and they can be an indication of the range of functions and constraints an object provides which are available to the subjects (Davis & Chouinard, 2017). Despite having its roots in the field of ecological psychology, the Affordance Theory has hitherto been applied to scholarly analysis in various other fields (Davis & Chouinard, 2017; Sarkis, 2021). A further definition of affordances by Norman (1999) regarding human-computer interaction and technology design describes affordances as “the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used” (Wang et al., 2018, p. 60).

Hammond (2010) noted the value of the Affordance Theory for the use of Information and Communications Technology (ICT) in the education field. He emphasised the prospects for action that are provided for the user of a device. An insightful relationship is created between the device and the user, although one should be mindful of the dynamics that could be a hindrance to the latter. These dynamics could include “ease of use, access/availability/free, effectiveness, convenience, attractiveness and innovativeness” (Bankole & Venter, 2017, p. 11). In addition, policies, procedures, culture, rules, and regulations could also constitute hindrances (Alshawmar, 2021, p. 3598). The defining factors for affordances are the users' acuity, deftness, and the social conditions in which users find themselves, compounded by institutional legitimacy (Davis & Chouinard, 2017).

According to Wang et al. (2018), researchers have recently been focusing on actualisation and the fact that this cannot be taken for granted. It was previously assumed that users can easily actualise an affordance, but this assumption has been disproven. Strong et al. (2014, p. 70) define actualisation as “the actions taken by actors as they take advantage of one or more affordances through their use of technology to achieve immediate concrete outcomes in support of organizational goals”. In response, Wang et al. (2018, p. 68) suggest that actualisation has to be viewed



from an individual perspective that is dependent on goals and intentions. In the same vein, affordances represent the potentials for action, which are relational and include enabling and constraining properties. Such potentials exist irrespective of the individual's actualisation.

Social affordances – such as social media platforms that allow individuals to interact – are created and facilitated by technological materials. They involve entanglement between human action and technological capabilities shaped by social environments and their use, both historically and institutionally (Faraj & Azad, 2012; Lankton et al., 2015; McKenna, 2020).

Dlamini and Nkambule (2020) mapped ICT affordances onto four principles of learning, namely autonomy, connectedness, diversity and openness. They suggest that affordances of ICT should lend themselves to technology-driven pedagogy that supports students' interactions and fosters student-centred classroom environments. In terms of connectedness, digital fluency, and the ability to reformulate knowledge and express oneself, using the ICT platforms is crucial. Whereas technology provides access and an opportunity for collaboration, the inequality in the system, such as a lack of adequate resources, cannot be ignored. A concerted effort must be made to seek measures to address these challenges continuously. Openness implies that there is a reciprocal relationship at play. The development of new technologies will affect the teaching practices that are available, and the demands of the teaching will ultimately feed back into further advances in technology (Dlamini & Nkambule, 2020, p. 6).

ACTION PLAN AND IMPLEMENTATION

The purpose of this study was to reflect on the working relationship between an educator in the Faculty of Education and an institutional instructional designer assigned to the faculty to explore the use of various tools/methods and ensure equity and access for all students. Additionally, the study investigated the educational technologies used to support students, as well as the challenges encountered. The question guiding the study was: *To what extent does the relationship and partnership between an e-learning specialist and an educator foster student support for inclusion, access and equity in higher education?*

The study employed an action research design, which is defined as any “systematic inquiry conducted by teachers, administrators, counsellors, or others with a vested

interest in the teaching and learning process or environment to gather information about how their particular schools operate, how they teach, and how their students learn” (Mertler, 2017, p. 3). This implies studying and reflecting on one’s own practice to increase utility, quality of actions and effectiveness for optimal educational outcomes (Mertler, 2017).

As stated earlier, the participants were an educator and an e-learning specialist. They have been working together on an Honours and a Master’s level module comprising 110 students for two years – 53 students in the first year (2020) and 57 in the second year (2021). The pair met virtually fortnightly during the initial stages of the lockdown in 2020. The steps involved in this cyclical process included initial meetings to identify the potential problem areas for which students would require support, followed by a recap of the functions and uses of the LMS, and additional training on new features. Reflections on these interactions were duly noted. The next steps involved practical use of the knowledge acquired by the educators and their documentation of positive and negative feedback – in some instances unforeseen issues were detected during the observation of student behaviour and their response to support. The e-learning specialist and the educator further engaged to reflect on the feedback that they received and to resolve the issues identified. Their meetings became more regular during assignment submissions, online tests and examinations. The data that they gathered comprised documented interactions, reflections on practices, interventions and professional development, observations and peer feedback.

The authors conducted reflexive thematic analysis, which involves an interpretative approach towards the analysis of qualitative data. Constant analysis of activities, information and outcomes resulted in the identification of solutions integrated into practice. They initially familiarised themselves with the data, thereafter proceeded with data coding and identification of preliminary themes, and concluded with a review of such themes (Braun & Clarke, 2021; Bryne, 2021).

FINDINGS

Four themes were identified: collaboration and support; training workshops; student support; and challenges encountered.



Theme I: Collaboration and support for educator

Over a period of two years, the e-learning specialist and the structures of the HEI accorded extensive support to the educator. Access to information and technical support for educators generally allowed them to provide supportive learning environments for students. This included providing information on updates to the LMS and guidance in instances where specific challenges arose – sometimes due to the educator's limited experience in utilising certain aspects of the LMS. The end-of-semester main examination was conducted for the first time on the LMS and constituted a major learning curve for the educator. The e-learning specialist provided guidance on any unclarity on the Help pages, thus allowing the educator to learn, practise and self-regulate.

The fact that the e-learning specialist was accessible for consultation was a major factor in strengthening the collaboration and working relationship between the two study participants. This accessibility ensured both parties' mastery of the synchronous video conferencing tools for teaching and resulted in the educator employing narrated PowerPoint presentations, pre-recording sections of lectures for students who had bandwidth issues, and recording whole lectures for students to access later. The LMS allowed educators and students to communicate and clarify any questions they had in real time – either in the chat or by using a microphone.

The class representatives played an important role during this two-year period. They served as the link between the educator and the students. Quite often, it was the class representative who alerted the educator to the challenges faced by the group, thus setting in motion a cycle of support in which the educator engaged the e-learning specialist to ensure the equitable inclusion of all students. The class representatives also served as a window into the students' minds by facilitating an in-depth understanding of their support needs and how best to meet those needs.

Other tools such as emails and WhatsApp groups enabled interactions between the educator and e-learning specialist; educator and student, and student and student. Even though there were opportunities to engage on the LMS through discussion boards and breakaway sessions during online lectures, the WhatsApp groups provided a popular avenue for social interaction between the students and access to the educator. The discussion boards are asynchronous tools that were used to promote academic discourse among the students by creating discussion forums and threads for

the students' responses and engagement. These provided some semblance of balance between teaching, academic development and social interaction, forming a structured community of inquiry.

Theme 2: Training workshops for educators

E-learning specialists provided regular training workshops across the institution and covered the scope of teaching and learning across LMS. All academic staff were encouraged to attend training sessions – already before the pandemic, but even more so during the pandemic – when workshops were offered on virtual platforms. Reminders were sent to all staff members to ensure that all modules offered in 2020 and 2021 would be presented online without difficulty. Self-paced training modules and lunch hour sessions to discuss specific topics afforded the educator the opportunity to participate and this alleviated the pressure to a certain extent. However, the realisation that these offerings were important and added value did not diminish the fact that there was limited time to participate in and engage with the contents of the session. Workshop attendance actually became a stressor during this period.

Theme 3: Student support

The institution as a whole, invested huge resources in student support, ranging from providing computers with various options for access to data to offering access to helplines for those who required it. Online tutorials were provided to enable the functional use of the LMS, while pre-recorded sessions were made available to students so that they could access learning content at own their pace. Furthermore, synchronous sessions were offered to deal with problems, explain difficult concepts and reinforce what was learned. The adaptive release function was furthermore utilised to make content available for specific students. Accommodations such as allowing handwritten/scanned assignments and assisting with technical problems were also given to students with specific needs or identifiable challenges.

Theme 4: Challenges encountered during the period

The challenges experienced during this period were the study time required,



respecting mutual boundaries, technical errors, systemic challenges and the constant need to keep up with changes.

It was clear very early in the first semester of the lockdown (2020) that a time-consuming process would be needed to ensure a support cycle in which the diverse students were properly supported for inclusion and equity. The students had skill sets that ranged from limited to average and then advanced. Associated social issues such as access to suitable devices, cost of data, lack of funds to purchase computer and phone accessories, lack of infrastructure in rural and remote locations and living conditions with limited privacy for full focus during lectures exacerbated the situation, because the institution that would have provided access to these facilities was closed, and students had to return home. The educator thus had to engage the students, explore the nature of the challenges that they faced and then attempt to find appropriate solutions. This process often involved contacting other colleagues and e-learning specialists to deliberate on how to solve the problem at hand. Due to the varied nature of the support required by the students, the educator's feelings of being overwhelmed were a constant reality. Exploring avenues for proper support took the educator away from other important tasks. However, there was no option if all students were to be included equitably.

Another challenge experienced during the period was the difficulty of maintaining mutual boundaries. The boundaries were between students and educator as well as between the educator and e-learning specialist. There were multiple instances where students required support to access study materials, submit assignments with deadlines set on the LMS or complete a test. Panic-stricken students then contacted the educator after hours to find out what to do in the face of the emergency. On several occasions, the educator also had to contact the e-learning specialist, albeit apologetically, to help resolve the issues. The fact these were after hours during the week and sometimes over weekends meant that usual office-type boundaries had to be ignored to ensure that students would not feel left out due to their circumstances.

Technical errors also occurred. On one particular occasion, the whole LMS went offline for everyone during a lecture. It came back online after about an hour, but the reconnection had not been anticipated. Once it was confirmed that the connection break was a systems error, a WhatsApp message was sent to the group (some were already calling individually) to say the problem affected everyone, and that a plan was being put in place to cover the lost time. A similar problem occurred due to system

challenges such as load shedding. The educator, e-learning specialist and students had no control over the power cut-offs. The educator advised students to access their areas' load shedding schedules so that they could be alerted ahead of time and could inform the educator accordingly.

One of the challenges that could not be avoided, involved the fact that life-long learning has become a reality in the 21st century. Educators quite understand that changes and improvements have to be made regularly to stay abreast of the demands of e-learning. Besides a perpetual need for updates and keeping up with new developments and trends, it was difficult to cope with the rate at which updates and upgrades occurred during the pandemic. The entire situation was a stressor.

Reflections and implications

The findings revealed that, owing to their effective access to information and technical support, educators managed to create supportive learning environments for students. According to Hammond (2010), the Affordance Theory provides special insights into the relationship between the technology available and our potential for action. Not all individuals can actualise an affordance, that is, they are unable to take advantage of affordances through technology in order to achieve desired tangible outcomes (Strong et al., 2014). The present study showed that collaboration between the educator and e-learning specialist enhanced their ability to take advantage of the affordances to achieve concrete outcomes for students. These included being supported, included and treated fairly.

Furthermore, the use of multiple modes of engagement reduced the probability of diversity being an aggravating factor. Social media platforms permitted not only an avenue for social affordances to be maximised, but also the opportunity for the educator and e-learning specialist to interact. This greatly facilitated the ease with which student support could be provided, as was found in previous studies in the field (Faraj & Azad, 2012; Lankton et al., 2015; McKenna, 2020).

The current study exemplifies the importance of relationships and partnerships to support students properly in the academic environment. The e-learning specialist and educator had to collaborate closely to ensure equitable access to learning contents, assignments and assessments, as well as other forms of support. The various training



workshops for professional development were tailored to develop the acumen and proficiency of educators so as to enable them to give adequate support to their students. The lecturer, in collaboration with the instructional designer of the faculty, also supported students in using the Learning Management System.

Before the pandemic, educators were encouraged to attend training workshops offered in-house. These sessions, which focused on curriculum matters and the use of technologies for teaching, were adapted to meet the current needs of the educators. Self-paced modules allowed lecturers to complete activities at their own pace, whilst conveniently consulting with e-learning specialists and instructional designers. The onset of the COVID-19 pandemic introduced a sense of urgency and created a nerve-racking situation that stakeholders at higher institutions had never expected or encountered before. The commitment of the HEIs to continue teaching and learning resulted in added pressure on the educators to develop new skills or to update their existing knowledge on the use of technology-enabled teaching and learning platforms.

The sudden implementation of the lockdown regulations in South Africa and the decision to move to fully online teaching and learning resulted in educators playing “catch-up”. Progressing from a hybrid to a fully online learning environment was less cumbersome for the educator because it was a question of up-skilling rather than outright learning from scratch. However, it still resulted in extensive hours of training and collaboration with an e-learning specialist. It was important to align teaching, curriculum content, learning outcomes and assessment criteria, and great effort had to be made as this contributed to providing quality education for all.

A challenge that stood out prominently involved the boundaries that were inevitably eroded. These boundary issues are still a great concern that need to be researched and addressed. The initial planning of online learning, subsequent action and reflection, followed by further training and planning, resulted in collaboration and interaction among our two study participants outside office hours. The study shows that if the educator or e-learning specialist had insisted on maintaining strict time boundaries, it would not have been possible to provide the full e-learning support required by students.

A sense of mutual commitment to the support of students was developed by the educator and e-learning specialist. The aims and objectives of their partnership relationship revolved around a solution-focused approach towards student support to

ensure that all students were included in the teaching and learning and that they were accommodated in line with their individual needs.

RECOMMENDATIONS

Higher education institutions should have backup strategies in place all the time. Core training workshops should be compulsory for educators and they should be allowed ample opportunity to attend. This includes the scheduling of such training at the beginning or end of the recess period to ensure that all educators have the time to attend.

Updates and systems enhancements should be factored in gradually and planned for the end of a semester, when there is expected to be minimal (or at least fewer) disruptions. Educators should not have to deal with competing work requirements that prevent them from engaging with and understanding the full functionalities of technology updates.

Tangible measures have to be put in place to ensure the health and wellbeing of staff in the drive to support diverse student needs and to ensure that students are all included and accommodated.

Finally, institutions need to encourage flexibility and preparedness for a change in the mode of operation. An enabling environment should be provided for educators to proactively develop the required skill sets, in collaboration with e-learning specialists. It is equally important for academics to create a greater awareness among students with regard to the support interventions that are available in institutions.

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