

Is my digital classroom inclusive?

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ABSTRACT: A major impact of Covid-19 on teachers and learners in higher education across the globe has been to take them out of shared physical spaces such as classrooms, lecture theatres and even laboratories and studios, and put them in digital classrooms. Learners and teachers have all become distant online teachers and learners. For many, this was a quick transition that was not always easy. However, many institutions now see the use of digital technologies in teaching and learning as a more permanent change (Sangster et al, 2020).

While evidence shows that digital technologies can promote and enhance learning, this is dependent on how technology is used. For example, a review by Lillejord et al (2018), evaluating technology in higher education for Norway, concluded that higher education was still very teacher centred, and digital technologies were not being exploited to promote more learner centred and active learning environments.

Any learning environment must offer quality and effective learning. This is aligned with the UN sustainable development goal No. 4 for inclusive and equitable quality education and “inclusive and effective learning environments for all” (www.un.org). Quality learning is therefore tied to inclusion in the learning environment. In Norway the requirement for inclusion in education is enshrined in the Equality and Discrimination Act (2017).

However, a digital classroom is not the same as a physical classroom. I am aware of the principles of Universal Design for Learning in inclusion, and also have several years’ experience in using digital technologies in teaching and learning, I had not explicitly considered UDL in digital classrooms. I evaluated my synchronous digital classroom from the perspective of UDL and inclusivity, using four diversity items from Nelson Laird’s (2011) inclusivity diversity model and relevant literature. I selected the items as relevant to a synchronous online classroom. These are concerned with pedagogy, classroom environment and adjustment. My evaluation suggests that while I have made some effort towards creating an inclusive online classroom, I should be doing more.

1 INTRODUCTION

Covid-19 has turned higher education institutions into digital providers of education. Many universities converted quickly (e.g. Skulmowski and Rey, 2020, Watermeyer et al, 2021). Teaching and learning online was new for many teachers and students. Studies undertaken since the pandemic began, suggest that the rapidity of change in the teaching/learning environment brought to light deficiencies in teaching in higher education (e.g. Lischer, Safi and Dickson, 2021; Watermeyer et al, 2021). However, the use of digital technologies in teaching and learning is no longer a short-term solution with changes towards fully digital or blended solutions likely to become long-term and permanent (Sangster et al, 2020).

Digital learning environments must provide quality and effective learning. This is aligned with the UN sustainable development goal No. 4 for inclusive and equitable quality education and “inclusive and effective learning environments for all” (www.un.org). Quality learning is therefore tied to inclusion in the learning environment. In Norway the right to education for all is enshrined in the Equality and Discrimination Act (2017). Inclusive education is conceptualised as ‘actions that embrace diversity and build a sense of belonging, rooted in the belief that every person has value and potential and should be respected, regardless of their background, ability or identity’ (Antoninis et al, 2020: 104). Antoninis et al (2020) present inclusive education as a system where all learners are together in the same classroom, arguing that this can result in improved academic achievement, as well as contributing to the “social

and emotional development, self-esteem, and peer acceptance”(pg.106) of diverse learners, and the more efficient use of resources by having one, inclusive system. As they point out, even if not all attempts at creating inclusive education are successful, arguing against it as an ideal is like arguing against the value of human rights (Antoninis et al, 2020).

This article is based on my synchronous digital classroom from the perspective of inclusivity. A digital classroom is not the same as a physical classroom. Nevertheless, as Stommel (2014) points out when we interact with students in a synchronous digital classroom, we still interact with them face-to-face. He suggests that teaching in digital spaces requires us “to reimagine how we think about space, how and where we engage, and upon which platforms the bulk of our learning happens” (Stommel, 2014). I use principles of universal design for learning (UDL) as a way of achieving inclusive classrooms, but it has been less clear to me how I have implemented these principles in synchronous digital classrooms. UDL promotes design that considers all learners from the outset, before they are known to the teacher or the institution (Tobin and Behling, 2018). Effective learning environments are designed to enable the greatest number of learners to participate and learn. Universal design in ICT is a legal requirement for public and private sectors in Norway (Uutilsynet, 2021).

2 LITERATURE

Stommel (2014) makes the point that all users of technology, including teachers, must reflect critically on how they use technology. There is much evidence that digital technologies can promote and enhance learning. However, they are not always used to full effect (Selwyn, 2013; Hendersen et al, 2017). A review by Lillejord et al (2018), evaluating technology in higher education for Norway, concluded that higher education was still very teacher centred, and digital technologies were not being exploited to promote more learner centred and active learning environments. Camargo et al (2020) nevertheless suggest that one of the effects of the Covid-19 pandemic on education is that student centred learning has become much more in focus. However, much of the research that has emerged on digital classrooms in higher education since the beginning of the pandemic shows that learners’ responses to digital learning have been mixed. Blizak et al (2020) in a study of Chemistry students in Algeria concluded that they were generally positive towards online learning although they preferred more traditional environments. Kahil et al (2020) found similar high overall satisfaction among medical students in Saudi Arabia as did Singhi et al (2020) among a similar cohort in the US state of Texas. However, nearly 25% of their respondents also felt that they had learned less than they would have done had classes been in person. Hussein et al (2020) looking at undergraduates in the UAE, found less positivity but suggested that this was less to do with the medium than the confusion of *quality* on-line learning and *emergency* on-line learning, a theme also taken up by Adedoyin and Soykan (2020). Blizak et al (2020) identified anxiety connected to the pandemic among learners which appeared to be greater for less experienced and younger learners than older. In their study undergraduates were less positive than post-graduates. This could be specifically related to ‘emergency’ online teaching, although the results from a wide-ranging survey by University College London, UK, on their students found that undergraduates were less positive than postgraduates about the planned introduction of more blended learning environments (HedSpace Consulting, 2021) that were outside of emergency measures. As the use of digital learning environments is likely to continue, then issues highlighted during ‘emergency’ measures need to be addressed, so that all teaching conforms with our moral and legal requirements to create environments where all students can learn.

Inclusive education presumes an inclusive pedagogy (Bartiz, 2021). Tuitt (2003: 243, in Stewart et al, 2020: 26) describes this as “a term that advocates teaching practices that embrace the whole student learning process”. However, Stentiford and Koutsouris (2020) through a review of research conclude that the term ‘inclusivity’ is complex and contested, without a commonly understood meaning and that inclusive pedagogies are often simplified responses aimed at satisfying performance measures common in higher education. Nevertheless, inclusive pedagogies have an established base in values that many

higher education institutions consider as core to their missions such as respect and social justice. Gale, Mills and Cross (2017) see beliefs, design and action as the bases for a socially inclusive pedagogy: belief that all learners are assets to learning; design that values difference and also recognizes and values non-dominant knowledge, and actions that work with rather than work on learners and their communities (p.351). Bartiz (2021) makes the point that inclusive pedagogies do not just help learners while they are studying but prepares them for a world outside the university helping them become decision makers regarding their own careers. In addition, inclusive pedagogies are associated with socially constructed pedagogies (Stentiford and Koutsouris, 2020) and critical pedagogies where knowledge is constructed in collaboration with learners and the teacher role is that of facilitator. Traditional transmission style teaching and the ‘banking model’ of education (Stommel, 2014) has been demonstrated to be problematic for learners from diverse backgrounds (Stentiford and Koutsouris, 2014).

Clouder et al (2020) in a wide-ranging review of work on neurodiverse learners in higher education suggests that challenges with disclosure require all aspects of teaching to adopt a universal design approach as a way of including all learners without stigma. One of the challenges they identify is the attitude of teaching faculty whose lack of knowledge about the prevalence and scope of neurodiversities, inclusion and universal design results in attitudes that are unhelpful to inclusivity and are reflected in teaching methods, curriculum and assessment. Cotán et al (2021) in a study on inclusivity particularly for learners with disabilities in Spanish universities, also concluded that teachers often felt insecure regarding inclusion of disability and inclusion generally due to lack of knowledge and training. However, Carballo, Aguirre and Lopez-Gavira (2021) in another study involving Spanish university faculty, acknowledged the same issues as Cotán et al, while also finding that many teachers already used effective inclusive practices in their classrooms. This suggests, as they discuss, that the classroom is where change happens effected by teachers through pedagogy. Teachers are therefore key to inclusive pedagogies, reflecting on practice and how they impact the environment (Bartiz, 2021).

3 EVALUATION

I worked for many years at the Open University, UK where I taught entirely or largely online. I had also completed a significant part of my own education and training using these technologies as a learner. I therefore had significant experience in using digital technologies in teaching and learning before I joined NTNU, Ålesund. My pedagogy is informed by social-constructivism and critical pedagogies. Learning takes place when learners participate, interact with each other and me. I am not the bringer of knowledge, but rather facilitator and guide. The subjects I teach at NTNU are language based and qualitative and lend themselves to these theories on teaching and learning. These pedagogies, as discussed above, are associated with inclusive pedagogies and this has always been a consideration in the design of my courses, assessments and how these are delivered. These theories also suggest that participation in class between learners and each other, and teachers is one of the key factors for learning. Curriculum that are designed and implemented with inclusive pedagogies in mind and appropriate teaching practices that increase participation and learner-teacher interaction (Carballo, Aguirre and Lopez-Gavira, 2021) are key to deep-learning (e.g. Nygaard and Holtham, 2008; Yeo, 2014) a prerequisite for the provision of quality education.

Regardless of my experience, the move to online teaching and its continuation have given me the opportunity to reflect on my teaching and students’ learning. To do this, I have used some of the diversity inclusivity items in Nelson Laird’s (2011) model. This model is a course planning model in diversity inclusivity and identifies nine elements: purpose/goals, content, foundations/perspectives, learner, instructor(s), pedagogy, classroom environment, assessment/evaluation, adjustment (p. 573). While all are important indicators of inclusivity and diversity, I have used only those directly related running a synchronous digital class. These are,

“You vary your teaching methods to encourage the active participation of all students” (pedagogy).

“You try to empower students through their class participation” (pedagogy).

“You work on creating a classroom atmosphere that is conducive to student learning “(Classroom environment).

“You adjust aspects of the course (e.g., pace, content, or assignments) based on student learning need” (Adjustment)

(Nelson Laird, 2011: 574).

3.1 Empowerment and participation

Encouraging active participation that empowers learners should be a goal of an inclusive digital class. Vonderwell and Zachariah’s (2005) study on graduate students identified four areas that appeared to mediate the level of participation in digital learning situations. These are, the technology and interface used, the expertise of the students re. content, the roles and institutional tasks students adopted online, and information overload. Park (2015) suggests that enhancing the quality of student-student and student-teacher-student interaction is a key component of active participation and that pedagogical and technical support provided by the teacher is an element in this enhancement. Palloff and Pratt (2007) recognised that both students and teachers may “adopt a new persona, shifting into areas of their personalities they had not previously explored” (p.7) online and that this may mean for some more active participation and for others, less.

In my synchronous digital class, there are a small core of students who speak in plenary, a slightly larger core who participate through the chat and again a larger group who speak or use the chat in small group discussions. There are also students who dissolve away as soon as breakout rooms are mentioned, a little harder to do in a physical class. DiAngelo and Sensoy (2019) found a range of reasons why learners were silent in a classroom and avoided speaking. They point out that silence itself can have a negative effect on others’ participation depending on the power relations between who speaks, what they say and who is then silent. They conclude that in a social justice classroom speaking out should be possible for nearly everyone. This means that participation is not about giving the right answer to a question but constructing knowledge by engaging in discussions where participants can challenge and be challenged without fear. This can only be done through appropriate pedagogies, class activities and the curriculum. For a more inclusive digital classroom, the activities in which learners participate must enable them to participate and help them overcome the reasons why they do not.

I have seen participation very much in terms of learners’ oral interaction with each other and me. A more inclusive pedagogy would provide opportunities for learners to participate in other ways. Learners who feel they are accepted in a classroom as they are, are empowered. This may require rewriting learning aims (and outcomes, at least at the sessional level) to reflect more accurately what participation means. The activities I use would also have to be adjusted to enable learners to achieve the learning outcomes and some of this may be better done in asynchronous digital spaces.

3.2 Classroom environment - Developing a community

Nelson Laird’s items suggests that the atmosphere of a classroom can enable learning. Quality interaction between learners of the kind that promotes willingness to speak as discussed above, is reflected in the classroom environment. In a digital class where the teacher is the main speaker, it is difficult to judge the quality of the environment, certainly with respect to inclusivity. How learners interact with each other is perhaps easier to observe and assess in physical classrooms – it’s possible to see friendships, students talking over a coffee in the break (Palloff and Pratt, 2007). This is not to say that physical classrooms have inclusive environments by dint of being physical – many people are still marginalised and excluded. However, teaching online has highlighted my contribution as a teacher to creating a learning community.

McConnell (2006) describes a learning community as “a cohesive community that embodies a culture of learning” (p.19), where learning is a responsibility shared by all the members of the community. Learners also share a space in time in which they start to learn, develop, and share knowledge that constructs their future professional identities. This requires regular and ongoing participation between members of that discipline community, including teachers. Learners have a shared interest in what they are learning and are therefore a community of practice (Wenger, McDermott and Snyder, 2002). Vonderwell and Zachariah’s (2005) study on graduate students suggested that a low level of participation was unlikely to foster the feeling of being part of a community of learners.

In a synchronous digital class, students log on individually, often sitting in complete silence until the class begins; they do not even greet fellow students they know well, as they might in a physical classroom. There is therefore no sense of community from the outset. I welcome in early arrivals by speaking to them with my camera on. However, this is difficult when a lot of students arrive at the same time and it doesn’t give them a space to connect with each other. To encourage some level of interaction among learners and myself from before a class begins, I now put up a screen with a question that is not directly related to the course content. Learners can answer in the chat and can react to each other’s answers, a technique I learned from Professor Tony Reeves at the University of the Creative Arts, UK (2020). This level of participation may encourage learners to continue to actively participate in the class through the chat function. My learners communicate in English, a foreign language to all of them, so in addition to performance anxiety, some may also have language anxiety associated with speaking out in a foreign or second language. Communicating in a foreign language increases cognitive load (Roussel et al, 2017) and how we expect learners to use language is an issue for an inclusive classroom, both in terms of creating a community and participation and empowerment.

3.3 Adjustment - Accessible materials

In line with universal design for learning, accessibility means accessible to all without differences. I’ve improved the appearance of presentation slides used in synchronous digital sessions so that they are easier for learners with neurodiversities such as dyspraxia and dyslexia, by using pastel shaded backgrounds with a coloured text. However, these are not just easier for learners with neurodiversities, but all learners and are thus aligned with inclusive pedagogy. While I have been using these in physical classrooms, they are perhaps even more important in digital classrooms. Despite considerable technological advances in screen quality, reading on screen is still associated with greater eyestrain and uncomfortable reading position (Köpper, Mayr and Buchner, 2016).

When I moved to online teaching in March 2020, I assumed that all learners had good computers and high-functioning internet. I dismissed problems reported by learners as localised and temporary. By doing so I probably excluded some students from attending synchronous digital classes. Further adjustments therefore might include releasing a presentation in advance, possibly with subtitles and spoken explanations, or pre-recorded lectures. I rarely give lectures, and I have only released limited PowerPoint presentations in advance, but with no explanation accompanying the slides. Teachers are sometimes concerned that recording lectures will discourage students from attending live lectures (Larkin, 2010) and while some studies found that students did tend to use them as a substitute rather than supplement (e.g. Gupta and Saks, 2013; Groeneveld, Bruggen and Brand-Gruwel, 2016), this has not been everyone’s experience (e.g. Larkin, 2010).

The focus of many of these studies was the effect on study success and outcome for learners with no mention of equitable access as a reason for recording lectures. However, Larkin (2010) and Nieuwoudt (2020) discuss outcome success in relation to equitable access for learners with poor internet provision, challenging circumstances and a diverse range of abilities and needs. They both stress the importance of recording lectures as part of a multimodal approach to accessing learning. Attending live lectures may not suit all learners who are neurodiverse, for example some on the autistic spectrum (Fabri et al, 2020) may find it easier to access lectures, or other materials, as and when they want. In addition,

providing materials in advance helps learners who need longer to take in written information because of neurodiversities such as dyslexia, or because they are working in a foreign language.

I have also consistently failed to show learners some of the assistive technologies currently (and freely) available, such as speech-to-writing that could be used in breakout rooms, and that may also increase use of pre-reading tasks and thus engagement in the subject and participation. Assistive technologies can reduce exclusion (Price-Dennis and Schlessinger, 2019) because they give learners multiple ways to access and create content.

4 CONCLUSION

I have focused on synchronous digital classrooms, specifically those that I have taught during periods of lockdown. I used parts of Nelson Laird's model and UDL as a framework to evaluate these classes informed by relevant literature. I began with an assumption that my background, experience and espoused learning theories would mean that I would receive a generally good evaluation from myself regarding the inclusivity of my digital classroom. However, although I have used some aspects of UDL and have considered issues such as participation and community, I still have a lot of work to do to make my digital classroom more inclusive.

Reflecting on my digital classroom has also highlighted that many of these considerations are also relevant to my physical classroom. I have only considered synchronous digital classrooms, but much of the literature I have consulted for this article shows that creating an inclusive synchronous digital class means making changes outside of the synchronous digital space so that learners are given a range of ways to participate and learn. This may involve rewriting some aims and outcomes, creating alternative activities, and making explicit use of assistive technologies. Some of these solutions may include asynchronous digital classrooms as part of the mix that increases the inclusivity of my courses overall.

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