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Learning from student experience: large, higher education classes transitioning online

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In March 2020, Irish universities closed their doors and teaching, learning and assessment moved online, due to the Covid-19 pandemic. This paper arises from a Dublin City University (DCU) research study with a three-fold purpose:

- (1) Examine the sudden transition of large classes (100+ students) from face-to-face teaching and learning to remote online provision from the perspectives of staff and students.
- (2) Contextualise these perspectives by reviewing relevant literature.
- (3) Inform the work of teaching large classes in future online teaching and learning spaces.

Presented here, are findings informed by; a rapid, systematised literature review; analysis of student and staff survey responses who experienced the swift move online; and academic support data mined by the Teaching Enhancement Unit (TEU) between March and June 2020. This paper will contribute to prompt, timely reflection on the lived student experience of engagement and isolation during the sudden pivot for large class cohorts. These reflections and analysis will add to the growing body of literature on large class teaching and online pedagogy, specifically in the context of the Covid-19 pandemic. The authors provide conceptualised solutions as we move out of the emergency pivot and into more considered, planned approaches to better engage students in online, hybrid and face-to-face contexts.

Keywords: student experience; engagement; online learning; large classes; isolation; C-19; teaching online; online pedagogy

Research background and rationale

It is estimated that 1.5 billion students worldwide have been impacted by Covid-19 (Teräs et al. 2020) with much face-to-face teaching rapidly moving to the online environment. To ensure continuation of teaching, learning and assessment during the Covid-19 pandemic, all Irish university campuses closed their doors to students

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in March 2020, and moved to remote, emergency delivery of programmes. Consequently, in the rapid move online, staff were faced with the urgent task of developing synchronous and asynchronous teaching and learning materials for students, hosted in Virtual Learning Environments (VLEs). This approach differs hugely from planned online pedagogy where the former is underpinned by panic, while the latter is underpinned by a deliberate orientation to the online environment by design (Eaton 2020; Hodges et al. 2020).

It is well documented that, for those who had limited experience of teaching or learning online, the rapid pivot to remote delivery was a challenging experience. This teaching and learning environment was alien to many students and staff, who had to quickly navigate the new terrain (Roy et al. 2020). The challenge for educators was to create an online environment that fostered interaction between teacher and student (Roache, Rowe-Holder, and Muschette 2020), mimicking the face-to-face experience. For large classes, this challenge is more likely to be magnified in the online space, especially if the class cohort comprises many hundreds of students. Embedding an ethic of care (Hornsby 2020), is crucial for all classes, but especially large classes, where students may feel isolated in a large group, particularly when trying to maintain engagement while navigating an unfamiliar learning environment.

Navigating towards high quality online delivery, whether fully remote or hybrid, necessitates remote teaching and learning across almost every pedagogy in Higher Education. Each institution, programme, and group of learners has its own myriad of constraints and needs; yet there is a common goal that unites us all: how do we provide teaching, learning and assessment to students in a manner that is accessible, engaging and supportive, while creating excellent conditions to enable student learning?

This article offers analysis of the student experience during the pivot to emergency remote teaching and learning, aligned to current debate on engaging online pedagogy, with a view to supporting educators in their future planning. Summary guidance is shared (Appendix 2), which is intended as a guide in designing future online, hybrid or face-to-face learning opportunities.

Methodology and theoretical perspective

The research approach was evaluative in nature, to illuminate the innovation (Parlett and Hamilton 1972) of moving large classes online from multiple perspectives. Data were collected a range of sources: a rapid, systematised review of the literature in the field; surveys of DCU students and staff who experienced the pivot of their large classes online; and data relating to teaching supports provided by the Teaching Enhancement Unit. The scope of the project was influenced by the urgency of providing guidance to staff as soon as possible, to inform practice for the new academic year.

The literature review was conceptualised as a data gathering process to inform the research questions, rather than the traditional approach of developing a rationale for the study (Cornish 2015). The four key areas identified as relevant to the research context were: Large classes in Higher Education; Inclusive approaches to designing learning; Perspectives on the recent, sudden pivot from face-to-face to online teaching and learning; Existing key DCU research reports relevant to the focus of this study. Appendix 1 provides the inclusion criteria and search strategy.

Student and staff online surveys were designed to address the research questions, using both open and closed question types. The surveys were piloted before circulation

to all staff in DCU and to students through Student Union channels, inviting those engaged in teaching and learning in 100+ student cohorts to participate. The data was analysed using NVivo through eight discrete phases of analyses, work which was outsourced by the research team due to the project timeline constraints.

Data captured on the teaching supports provided by the Teaching Enhancement Unit included engagements with the Virtual Learning Environment online support resources; and attendance at professional learning workshops. Data were cleaned, then filtered to reveal data relating to those involved in teaching large cohort classes.

Findings and results

Literature on teaching large groups in Higher Education is characterised by the challenges associated with the context (Allais 2014); the preponderance of the knowledge-banking dynamic (Stoerger and Kreiger 2016); the impeding of student performance (Hornsby and Osman 2014). The issue of presence and connection in the large class context is often debated by teachers (Auslander 2000; Cole and Kosc 2010) and students (Arvanitakis 2014; Cuseo 2007) experiencing a sense of isolation and disconnection. That sense of isolation is echoed in recent commentary exploring the sudden pivot to remote teaching, which arose from lack of synchronous teaching, students having cameras turned off during live classes, asynchronous tasks and activities that required individual student engagement and lack of opportunity for students to interact with each other.

The sense of isolation experienced by both staff and students during the initial move to online teaching and learning in the large cohort context emerges strongly from the survey data. Staff responses (85%, $n = 40$) reveal a strong feeling of disconnect with the student cohort, with 56% ($n = 23$) reporting less personal interaction with students in the large cohort online teaching context. This sense of disconnection is captured clearly in the open-ended responses:

The biggest difference for me was the lack of teacher/student engagement ... in the big class, I speak to students as they enter the room; I walk all around the lecture 'theatre' ... for me, teaching such a large group online was much 'flatter' than F2F and, as a teacher, I found that difficult. [S15]

Beyond the emotional experience of disconnection, respondents were concerned about the implications of disconnection and isolation for the learning experience:

... I don't feel I can push the students morally, when I'm not there to safeguard the class. [S18]

The student experience was similar with 65% ($n = 225$) agreeing or strongly agreeing that they felt more isolated in the online large class context than in the face-to-face context. Student were also aware of the implications of this isolation for their learning:

I did not attend a lot of the lectures online and, unfortunately, I did not study half as much as I would have done in classes. [ST104]

You felt like you were so isolated and because you weren't talking to peers. We could have had a completely different understanding and a limited viewpoint. [ST337]

The survey findings include some positive experiences on the move from face-to-face to online teaching and learning for large cohorts with respect to student engagement. A number of students found it was easier to ask questions in the online space (9%, $n = 30$), with one respondent indicating suggesting the online space offered an opportunity for inclusion of diverse student voices.

We were able to hear other people contributing for the first time. [ST192]

In addition, staff acknowledged that online teaching tools such as the chat functionality in Zoom, enabled greater participation for large class cohorts:

More questions asked by students in general through the chat interface, rather than being intimidated in class with regard to asking questions in front of a large crowd. [S01]

While it is important to include these positive reflections, the findings from both student and staff surveys indicate that most respondents experienced a sense of isolation during the pivot to online teaching.

Discussion and conclusion, including future-facing recommendations

Analysis of findings from both the literature review and the data illuminate possible causes for this sense of isolation/disconnection. Accomplishing a sense of classroom community is recognised as difficult for teachers new to the online space and this difficulty is mirrored in the literature relating to large class teaching in the face-to-face context. The importance of creating a classroom environment when transitioning online is emphasised and underpinned by interaction between teachers and students (Roache, Rowe-Holder, and Muschette 2020) and reduced student engagement following the move online was noted by some. The sudden nature of the move to online teaching and learning and the lack of time for considered planning may have hindered staff in creating a classroom environment in the online context as acknowledged in this response relating to compromised student engagement:

Perhaps that is partly due to the fact that it was a sudden, emergency transition ... perhaps if planning an online module/programme from the outset, I might feel differently. [S15]

Teaching strategies adopted in the initial pivot online may also have impeded the creation of a classroom environment in the online space, with 21% of students surveyed reporting no engagement with live learning activities. While the challenges of student engagement in the online live context are recognised in the literature, scheduling some live teaching activities may support a sense of classroom community. Furthermore, 56% of students indicated that they only participated in live sessions in groups of 100+, which Hodges et al. (2020) suggest may not offer sufficient opportunity for engagement with the lecturer and peers.

Behavioural factors contributing to the sense of isolation in the online space include the non-use of video in the live online class context, with 47% ($n = 21$) of staff reporting that students in their large class cohorts only sometimes turned on their cameras and 30% ($n = 14$) reporting that students never turned them on. One

respondent makes a direct connection between such practice and the sense of disconnection for staff:

Students won't turn their cameras on – when they do, I can see them caring for their kids and that they are also mopping the floor: they don't do that in the lecture theatre. I can't see the response to some of the really difficult things I'm saying. [S18]

Staff reported a reluctance for students to ask questions using the microphone but a much higher rate of asking questions using the chat functionality. Lack of contact with the lecturer ($n = 19$); not being able to ask questions ($n = 25$); and lack of peer learning ($n = 17$); were also cited by students as challenges to learning online in large cohorts, all possibly contributing to a sense of isolation.

While the aim of this study was to provide guidance for staff for moving large cohort teaching online beyond the emergency pivot context, summarised in the guidance document (Appendix 2), the seeds of changing practice were already evident in the survey respondents' own reflections. Connecting to the theme of isolation, students suggested providing dedicated time to ask questions of staff through online fora/ dedicated question and answer time in live online classes and more communication options. Staff shared planned changes to online teaching strategies, moving beyond emergency remote teaching towards a more considered and pedagogically robust approach. Examples of such plans include a more considered mix of synchronous and asynchronous learning activities and a more structured approach to engaging students through the text chat functionality. Reflecting such plans, the data from the professional learning attendance indicates a high level of interest from staff to upskill in relation to improved communication and engagement in the online space, with attendance at workshops on topics such as polling and breakout rooms particularly high.

Provision of opportunity for student interaction and engagement in the convergence of the large class and online contexts is a key pedagogical element to be considered, requiring the creation of a social presence by ensuring a cordial learning environment and a cognitive presence by communicating content clearly (Ní Shé et al. 2019). This will require reflection on the interface between the balance of synchronous and asynchronous engagement and the purpose of online tasks. The summary guidance document (Appendix 2) draws together recommendations from the research for the future learning context across four categories: curriculum development in the online space; teaching, learning and engagement and assessment. Reflecting upon the implications for large-class pedagogy, and moving forward in the medium and long term, the authors propose recommendations for the enhancement of the student learning experience, which include:

- Strategies for enhancing a learning community in online spaces
- Developing and nurturing teacher, social and cognitive presence
- Embedding an ethic of care into curriculum, teaching, learning and assessment
- Clarity on devising a sustainable system for effective communication

The pedagogical redesign of the learning environment from face-to-face to online continues to be achieved in an emergency context, in contrast with the development of programmes and modules originally designed for the online environment. We are now into the next phase of the emergency, which is nuanced differently because of the availability

of up to date research, the opportunity to reflect, and a collective, growing understanding of what can enable student success in the large, online teaching and learning space.

Ethical considerations

This study was financially supported by the DCU Educational Trust as part of the DCU Covid-19 Research and Innovation Hub. The application for ethical approval was granted by the DCU Research Ethics Committee, following amendments to the original. The authors do not have any conflicts to disclose.

Limitations

The literature review represents a rapid systematic review and not a systematic literature review in the purest sense, due to the time constraints of the project. Forty seven staff and 343 students took part in the surveys, and so the data may not be completely representative of the entire population engaged in teaching and learning online. In addition, while the survey questions were designed to collect data specifically to the teaching and learning for large cohort contexts, respondents may have lost the large cohort focus at points. In terms of the teaching support data, the data collected was limited to the support offered only by the Teaching Enhancement Unit. Many other units provided support during the pivot to online learning across the University, which is omitted from this analysis.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Supplemental data

Supplemental data for this article can be accessed at <https://doi.org/10.1080/03323315.2021.1916566>.

Notes on contributors

Karen Buckley is an Assistant Professor in the School of Inclusive and Special Education at the Institute of Education at Dublin City University. As a qualified post-primary teacher and experienced lecturer in teacher education, Karen has enjoyed working across a range of educational settings in second level, further education and higher education. With particular research interest in inclusive pedagogy, Karen is an advocate for inclusive practice to improve and optimise teaching, learning and assessment in higher education. Karen is a Doctoral candidate in Maynooth University where she is exploring Teacher Education, Identity and Professional Development practices.

Suzanne Stone is a Learning Technologist at Dublin City University and has worked in the education sector for over 15 years. Actively engaged in research relating to the application of educational technologies in teaching and learning, Suzanne's research informs her practice as a learning technologist. Professional interests include: student engagement in online synchronous (live) online teaching and learning; assessment and feedback; digital skills and competencies for staff; video for teaching and learning; social media in education; and Universal Design for Learning. Suzanne is currently engaged in research relating to Digital Well-being as part of a Doctorate in Education.

Ann Marie Farrell is a lecturer in the School of Inclusive and Special Education, Institute of Education, Dublin City University. Ann Marie began her career as a primary school teacher, working with infant classes. Following that, she worked with post-primary aged students, initially in a mainstream post-primary school as a special class and learning support teacher before moving to work in a special school for students with mild general learning disabilities where she introduced and coordinated the Leaving Certificate Applied Programme - the first special school in Ireland to provide access to this programme.

She is now enrolled in Sheffield University's EdD programme and will be investigating the pedagogical beliefs of higher education teachers of large classes. Ann Marie has conducted, published and/or presented on a range of topics relating to teaching, learning and inclusion of pupils with special educational needs in primary and post-primary schools and is currently engaged in research focusing on preparation of teachers for effective inclusion of pupils with special needs and learning difficulties in initial teacher education. She works across a number of initial and continuing teacher education programmes at levels 8, 9 and 10. She won the St. Patrick's College President's Award for Excellence in Teaching in 2012 and the DCU President's Overall Award for Excellence in Teaching 2020.

Mark Glynn currently leads a team of eight people charged with enhancing the learning experience of students within DCU. As such Mark has direct involvement with cutting edge innovative teaching techniques and learning technologies that are being implemented throughout the university. Furthermore Mark plays a key role in both local and national strategically important teaching initiatives. The main aim of his current role is to encourage and enable staff in DCU to increase their capacity to offer flexible learning. This involves managing both organisational and pedagogical based projects.

Mark has a deep insight into the key issues for higher education in Ireland in particular the technology enhanced learning, learning analytics and flexible learning. He plays key leadership roles in promoting innovative teaching and learning methods throughout the sector and is considered to be a leading authority in the use of virtual learning environments, assessment design and Universal Design for Learning (UDL).

Rob Lowney is a Learning Technologist in the Teaching Enhancement Unit, Dublin City University. He works with academic staff to enhance the teaching, learning and assessment practices on their modules with digital technologies. Rob has a particular interest in empowering academic staff to implement technology-enhanced assessment strategies. Other areas of interest include flipped learning, mobile devices in education, learning analytics and reusable learning objects. Additionally, he is a Moodle expert and an Apple Distinguished Educator. He holds a BA and MA from University College Dublin and an MSc in Applied eLearning from Dublin Institute of Technology. He is currently a digital learning EdD student.

Seán Smyth is a final-year, Bachelor of Education (Primary) student at Dublin City University. As part of his undergraduate degree, Seán undertakes a major specialism in Digital Learning. This specialism examines how digital technologies are effectively embedded in all aspects of primary teaching, learning, and assessment.

Alongside his studies, Seán is an active member of DCU Students' Union. He has been elected Class Representative on two occasions. He also represented DCU Institute of Education students as Education Faculty Representative during the 2019/20 academic year. In this position, he liaised with university staff, students, and class representatives, particularly during the emergency transition to remote learning in March 2020.

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