Elicit and engage: Staff experiences of a student polling tool in large classes

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Abstract

This paper shares the experiences of large class teachers at Dublin City University (DCU), Ireland, in utilising the Vevox student digital polling and engagement tool during class to enhance student learning. The findings suggest that the use of Vevox in large classes succeeded in engaging students, supporting literature which suggests that these types of tools have a particular use in large classes where they can support active learning, be fun and reduce student boredom, and can create energy in the large class context.

The DCU experience has shown that student polling and engagement tools can enhance large classes, so it is a worthwhile endeavour for colleagues to explore this option in their own contexts also.

Keywords: *Student polling tool; higher education; large classes; student engagement*

1. Introduction

This paper shares the experiences of large class teachers at Dublin City University (DCU), Ireland, in utilising a student digital polling and engagement tool during class to enhance student learning. Technology-enhanced learning (TEL), when designed in a pedagogically appropriate and sound way, can offer benefits to learners, such as augmenting their cognitive processes in learning and offering efficiencies in how they learn (Dror, 2008). It can also support active learning, in which students think about what it is they are learning as they learn it (Prince, 2004). The incorporation of technology in education can also lead to pedagogical innovation (Laurillard et al., 2009). Additionally, myriad policy at supranational, national and local level sets ambitions for higher education institutions to adopt forms of TEL as part of the ongoing digitisation of higher education. Utilising student polling and engagement tools in class can therefore support both policy implementation as well as enhance 'on the ground' teaching and learning.

This paper will first present an overview of the context in question, before presenting a high-level summary of the literature around student polling and engagement tools. The methodology employed to gather DCU staff experiences of the tool will be described, after which the findings will be shared, followed by a concluding discussion.

2. Description of the Teaching/Learning Context

DCU is a young, dynamic university located on the northside of Dublin city, and spread across three academic campuses, with approximately 19,000 students, undergraduate and postgraduate (Irish Universities Association, n.d.). DCU currently offers programmes of study within the fields of Humanities & Social Sciences, Education, Business, Science & Health and Engineering & Computing. An ambitious incorporation programme in 2016 saw three colleges merge with the existing university, increasing staff and student numbers by one third (Dublin City University, 2023). This, combined with a general rise of student numbers in Irish higher education in the past few years (The Irish Times, 2021), has contributed to the growth of large classes within the university, particularly across flagship undergraduate programmes in Humanities & Social Sciences, Education and Business.

Existing literature on large class contexts indicates that students in these contexts sometimes report dissatisfaction with teaching and learning (Persky & Pollack, 2010), perhaps due to the challenges teachers can face in fostering connections with their students when class sizes are large (Auslander, 2000). A teacher-centred, passive-student, transmission model of teaching and learning is often employed as the default in large classes, as teachers feel that is the only model that works—given the staff-student ratio in a large class—even though it does not necessarily create an effective learning experience (Folley, 2010; Stoerger & Kreiger, 2016).

DeRogatis et al. (2014) note that there is an inherent energy in large classes, and when large class teachers plan for and encourage energy generation between them and students, it can create a growing cycle of positive interactions. This could potentially counteract student boredom in a large class, which is noted to cause disengagement (Arvanitakis, 2014).

The Teaching Enhancement Unit (TEU) at DCU is the university's centre for teaching and learning, and among other things is the business owner of the institution's learning technology ecosystem, which comprises a Moodle-based virtual learning environment, text-matching software, video-conferencing software for online synchronous classes, and more. Until relatively recently, the TEU did not provide an institutional level polling and engagement tool for DCU teachers to use, despite such tools being available and in use by institutions across the globe for close to two decades.

In late 2019, Ireland's national body for leading and guiding teaching and learning enhancement in higher education, the National Forum for the Enhancement of Teaching and Learning (NFETL) conducted a national survey of all higher education staff and students. This Irish National Digital Experience (INDEx) Survey sought to explore how students and staff experienced digital technologies in their teaching and learning, with a view to establishing a baseline and informing decision-making going forward (NFETL, 2020). Although the survey did not distinguish between large and non-large classes, the report shared that nationally, Irish students found polling the top digital activity to support learning in their courses:

> Nearly a quarter of students highlighted the use of polling devices in class or knowledge check style quizzes as part of their course as being really useful. Students liked the ability to be engaged in class through such interaction, with some saying they liked the ability to participate anonymously (NFETL, 2020, p. 35).

Within the DCU subset of the INDEx Survey findings, staff respondents listed a number of polling/engagement tools as being useful in their role, including eminent ones such as Kahoot, Mentimeter, Slido and Socrative, which are largely web-based. The TEU deduced that in the absence of an institutionally-provided tool, teachers were accessing their own to use in class. Whilst encouraging to see teachers take this initiative to incorporate technology into their practice, the TEU was concerned with the plethora of tools being used and what the terms of service were, particularly if teachers were availing of free or freemium[1] accounts to activate these tools. The data collection and privacy practices associated with such type of accounts could be dubious, with teacher and student responses potentially collected and utilised for unknown purposes. On foot of this, the TEU undertook

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[1] Freemium is a pricing model often used by providers of digital tools or services in which some features are provided free of charge, and others restricted, which users must pay to access.

to pilot an institution-wide polling and engagement tool, which would be available to all teachers to use with their students, including large class teachers, and which would meet the university's due diligence obligations.

Compton & Allen (2018) note that there are many polling/engagement tools available from myriad providers and institutions should consider what they offer to them specifically. After a period of desk research, the TEU commenced a trial with the Vevox[2] student engagement tool in early 2020. Vevox was chosen because of its simple-to-use interface, its accessibility and data protection practices, and its endorsement from the Association for Learning Technology, which utilises it at its conferences (Association for Learning Technology, 2022). DCU teachers could activate an account with Vevox and avail of all of the tool's features, with no restrictions: multiple polling question types, PowerPoint integration, question and answer board, surveys and gamified leaderboard. After a successful trial, the tool was renewed each subsequent academic year. As a SaaS (Software-As-A-Service) tool, additional features and enhancements came on stream since 2020, such as a simplified dashboard, new polling types, integration with the Zoom videoconferencing platform, DCU user authentication, and more.

Since 2020, the TEU has supported the rollout of Vevox among DCU teachers by providing training sessions and support resources, fostering a community of practice, and evaluating the staff experience of using it. The user base—comprising large and non-large class teachers—has risen steadily in that time period, resting at approximately 230 by spring 2022. Staff experiences have remained consistently positive for three years, aligning with the prevailing literature on the benefits of tools such as these in teaching and learning, which is discussed in the next section.

3. Literature Review

Although DCU's institution-wide journey with a student polling and engagement tool is recent, there exists a growing body of literature on these types of tools, which have been utilised in higher education institutions for almost 20 years now. They have been known by other terms such as student response systems, or clickers, which refer to physical clicking devices distributed to students during a class which they could use to respond to a question or prompt. Many contemporary tools (such as Vevox) now take the form of web-based tools, with students usually using personal devices (such as smartphones) to respond to questions or prompts in class.

Fies & Marshall (2006) note that student engagement/response tools can promote learning when utilised in a pedagogically sound fashion. This is likely because they can alter the

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[2] www.vevox.com

traditional format of a teacher-centred class by supporting active participation from students (Trees & Jackson, 2007). Although suited to most types of classes, they have particular use in large classes (Skiba, 2006). This is possibly due to the fact that the anonymity often offered by such tools (which Vevox offers by default) increases student engagement (McLoone & Brennan, 2013). Because of the safety of anonymity, a diversity of opinions can be shared in class; learners do not experience anxiety as they otherwise might if they were identifiable (Stowell et al., 2010).

Learners respond well to these tools being used in a formative fashion, in particular those students who are otherwise reluctant to engage during class (Graham et al., 2007)—which also aligns with the findings of the INDEx Survey above (NFETL, 2020). It is noted that feedback is central to student success in higher education (Y1 Feedback Project, 2016) and tools such as these offer opportunities for students to receive feedback and thus self-regulate their learning (Hedgcock & Rouwenhorst, 2014).

Use of student engagement tools in class can also act as a catalyst for deeper discussion and critical reflection (Ludvigsen et al., 2020). As well as this, learners appreciate the 'fun' element associated with the use of such tools (Heaslip et al., 2014). In particular cases where such tools support gamification, learners can experience higher engagement, motivation and satisfaction (Tan & Saucerman, 2017).

4. Methodology and Data Collected

Staff experience of using Vevox is captured at the end of each academic year, through an anonymous survey, ethical approval for which was received from DCU's Research Ethics Committee. The survey draws on elements of Venkatesh et al. (2003) Unified Theory of Acceptance and Use of Technology (UTAUT) and elements of Burch et al. (2015) conceptual framework and survey instrument for student engagement.

UTAUT is a form of a technology acceptance model, and describes the factors that influence whether or not a user (i.e. a DCU teacher) will adopt and continue to use a particular tool in their practice. The factors include, but are not limited to:

- Performance Expectancy ('PE'—does the tool perform in the way that you expect it to);
- Effort Expectancy ('EE'—how much effort does it take to use the tool and is that effort level reasonable);
- Attitude ('AT'—what is a user's general attitude towards the tool);
- Social Influence ('SI'—do others, including superiors, think a user should use the tool);
- Facilitating Conditions ('FC'—what support and resources are available);

- Self-Efficacy ('SE'—how well can a user use the tool themselves); and
- Anxiety ('AN'—does the use of the tool cause any sort of anxiety, worry or fear).

The Burch et al. framework proposes four components of student engagement:

- Emotional engagement;
- Physical engagement;
- Cognitive engagement in class; and
- Cognitive engagement out of class.

Therefore in combining these frameworks to create a single survey instrument, the TEU intent is to capture staff acceptance and intended continued use of Vevox, and staff impression around the extent (if any) to which Vevox supported components of student engagement when used in class.

The survey comprised mostly Likert-scale questions (quantitative) and some open-ended questions (qualitative). In the Likert-scale questions, respondents indicated their level of agreement to statements, where '1' is equivalent to 'strongly disagree' and '5' is equivalent to 'strongly agree'. As well as questions derived from UTAUT and the Burch et al. framework, general usage questions were also included.

Surveys issued in 2020 and 2021 did not distinguish between large and non-large classes teachers at DCU, however in spring 2022 a new question was added to the survey in which respondents indicated if they had used Vevox with classes of more than 100 students, i.e. a large class. This allows the TEU to identify from the 2022 dataset the experiences of DCU large class teachers specifically, which now follows.

In spring 2022, the anonymous survey was issued to 230 Vevox staff users at DCU. The survey received a 15.2% response rate. 31.45% of those respondents indicated they had used Vevox in large classes in that particular academic year. The quantitative findings from this cohort of respondents (n=11) are presented in the two tables below, showing the average level of agreement (1 being the lowest, 5 being the highest) with the statements presented.

Table 1. Average level of agreement from DCU large class teachers with statements related to the acceptance and use of Vevox

UTAUT Statement	Average level of agreement
PE: I find Vevox useful for my teaching	4.27
PE: Vevox has helped me engage students in class	4.45

PE: Vevox has helped students learn in class	4.09
PE: Vevox has helped give me an insight into students' learning/understanding in class	4.09
EE: Vevox is easy to use	3.82
EE: Getting to know Vevox was easy	3.82
EE: It does not take too much time to become familiar with Vevox	3.64
EE: I am comfortable using Vevox in class	4.09
AT: Vevox helps make classes more interesting	4.55
AT: Vevox helps make classes fun	4.18
SI: My head/co-ordinator/chair etc. thinks I should use Vevox	3.00
SI: Colleagues think I should use Vevox	3.18
FC: There are sufficient resources/support to help me use Vevox	4.18
FC: I have sufficient knowledge to use Vevox	4.18
FC: Vevox works well with other tools and technologies	3.18
SE: There are specific people I can turn to for help with Vevox	4.27
SE: Vevox works well with the way that I teach	4.45
AN: Vevox is somewhat intimidating to me	1.91
AN: I hesitate to use Vevox for fear of making a mistake	1.64

Table 2. Average level of agreement from DCU large class teachers with statements related to the level of student engagement when Vevox was used in class (derived from Burch et al. framework)

In classes where I used Vevox, I felt students…	Average level of agreement
…were more enthusiastic than usual	3.91
…were more interested in the content than usual	3.82
…were more excited than usual	3.64
…exerted more energy than usual	3.82
…tried to perform well, more than usual	3.27
…were more focussed on discussion/activities than usual	4.18
…were thinking more about what it was they were learning	4.09
…enjoyed using it	4.00

Furthermore, when asked for what purposes they used Vevox in class, large class teachers listed some of the following activities:

- As a fun exercise;
- Q&A;
- To allow students to make choices/decisions about something;
- To check students' understandings in class;
- To elicit students' opinions in class;
- To get feedback from students;
- To run a quiz.

Additionally, when asked if Vevox should continue to be made available in DCU, large class teachers overwhelmingly agreed (4.73/5.00).

5. Concluding Discussions

It is clear from the findings that Vevox is received positively among large class teachers at DCU. On average, respondents strongly agreed that the tool performed as they expected,

with a slightly lower average agreeing that the effort needed to use the tool was as expected. On average there was strong agreement that the tool led to fun and enjoyable classes, and that it did not cause a feeling of intimidation or anxiety. The social influence from peers to use Vevox was neither strong nor weak, and there was strong agreement that there was sufficient support to use the tool and the tool is aligned to their practice.

When asked about how they felt the tool engaged students in class, there was strong agreement that students enjoyed using it and that it led to active learning. There was also agreement that students were more enthusiastic and excited in the material, compared to usual, and that there was more energy.

Taken as a whole, these findings suggest that the use of Vevox in large classes to engage students did succeed in doing so. The experience of DCU large class teacher correlates to the literature on these types of tools, namely that they have a particular use in large classes, that they can support active learning, they can be fun and reduce student boredom, and they can create energy in the large class context.

As the massification of higher education continues, it is clear that large classes will remain a feature of our higher education institutions. However, that does not mean that large class teachers must resign themselves to a dominant model of transmission teaching. The DCU experience has shown that student polling and engagement tools can enhance large classes, so it is a worthwhile endeavour for colleagues to explore this option in their own contexts also.

Acknowledgements

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