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The open dataset on students' perceptions of virtual learning environments in Ireland: Collaborating to listen to the student voice

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Abstract

The Irish inter-institutional virtual learning environments (VLEs) open dataset stems from ongoing work with a rolling longitudinal survey of students' usage of VLEs which has been ongoing in 12 higher education institutions since 2008. The project has collected over 21 000 student responses to date through the growth of an extended network of educational technologists collaborating from multiple institutions. The survey instrument uses a common set of questions, and on condition of anonymity, the participating institutions pool their data to compare and contrast the results. The large representation of the data collected at national level opens the possibility of international participation to add a cross-national dimension to the data analysis.

Dataset

Location:
— Information on research project: http://ilta.ie/activities/research-projects/
— Survey instrument: https://drive.google.com/file/d/0BzZv7aRIAgaVeWhDd0MtSVdTd1E/edit

Creator: multiple Irish higher education institutions. The project is currently integrated in the research strand of the Irish Educational Technology Association

Date: 2008 to present

Format: SPSS file

Restrictions to use: Access to dataset on http://www.pbworks.com on condition of agreement with participation guidelines (see Ethical Considerations below) and contribution to the dataset with data at raw level. On signing participation agreement, access will be granted to researchers with experience of gathering and contributing data.

Background

Virtual learning environments (VLEs) are among the most widely adopted technologies in higher education, so to justify the widespread investment in VLE technology, it is important to study patterns of actual student VLE use and student satisfaction (Naveh, Tubin & Pliskin, 2010). However, educational technology research (and much of broader educational research) is characterised by a case study approach to the use of the VLE in a particular discipline or with a

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particular group (Leese, 2009; McGill & Hobbs, 2008; Stricker, Weibel & Wissmath, 2011). On the other hand, there are few studies which focus on the use of the VLE over a period of time: we tend to see snapshots and census-like countable data, rather than studies which give us a picture over a number of years of how a particular technology has been used.

The open cross-institutional dataset presented here offers the opportunity to address this gap from a longitudinal research perspective. A survey of student attitudes and usage of VLEs was designed under the umbrella of the National Academy for the Integration of Research, Teaching and Learning (NAIRTL) in order to identify and quantify key barriers to usage of VLEs, benefits to students and student usage patterns of the VLE. After an open invitation in 2008, five institutions ran the survey and agreed to pool the raw data, and a common set of rules was agreed to ensure findings could not be used for marketing or advertising. In subsequent years, additional institutions joined the group, to a current total of 12.

The project was born out of a persistent common need for better information on student perceptions of VLEs. It developed organically in response to this issue, with operating structures at flexible levels of formality. We operate as a peculiarly sustainable group, relying only on the continued interest of participants to maintain it using remote collaboration tools (Skype, Wikis, Google Docs) to develop and share insights. Much of the value of this research is internal to each organisation, as it provides participants with a sense of how their own work and issues fit into a wider context of their peers. The survey data provide each institution with useful information on how their uptake and usage patterns compared with other institutions, in a framework which prevents abuse of the findings for marketing or public benchmarking.

The institutions who have participated thus far represent a diversity of organisational histories and VLE systems, and results to date include the responses of more than 21 000 students. The resulting database constitutes the largest collection of information on student experience related to technology-enhanced learning in Ireland and has representation of a substantial proportion of higher education institutions in the country. This project is ongoing, open to participation by any educational institution within Ireland and beyond, and is currently integrated in the research strategy of the Irish Learning Technology Association (ILTA). We have presented results to date in multiple professional conferences and relevant national publications such as in Cosgrave *et al* (2013) and Risquez *et al* (2013).

Results to date suggest a model of VLE usage to solve the problem of disseminating material to students, combined with early signs of using it to address the problems of managing and grading submitted work, and serving as an additional communication forum for students. A large majority of students access the VLE from home and outside of scheduled study hours. The reported use of mobile devices has increased substantially since 2008, with the flexibility they afford. Students mainly sought comprehensive and consistent basic usage that facilitated easier navigation of VLEs. Their feedback has indicated that capacity is gradually being developed in the academic community, and technical issues such as system reliability, usability, access, etc did not represent significant barriers to use, regardless of the choice of VLE in an institution. Instead, lack of use by lecturers was by far the most common barrier to use identified, and students clearly would like their lecturers to make more use of the VLE. The majority of students report that the VLE helped to make their lecturers more accessible to them, with a third reporting that they were more likely to communicate with their lecturer using the VLE. We have found that good educational design is essential, as student satisfaction with the VLE is intrinsically linked with the educational design behind the use of the tools.

These findings align with international evidence (Blin & Munro, 2008; McGill & Hobbs, 2008; Selwyn, 2007; Sun, Tsai, Finger, Chen & Yeh, 2008). More widely, they can be understood as part of a trend where lecturers tend to make, on average, only incremental changes to their practice

when faced with new technology in the form of a VLE (Dutton, Cheong & Park, 2004; Jenkins, Browne & Walker, 2005; Kirkup & Kirkwood, 2005). Naveh *et al* (2010) go on to suggest that, "in fact, instructors can maintain their conservative teaching habits except for posting their course content on the website. From an organisational perspective, this can be done at low cost, yielding relatively high student satisfaction" (p. 132). As the debate on innovation (Groom & Lamb, 2014) and openness (Weller, 2014) in learning environments progresses, this dataset will provide a foundation for evidence-based approaches to researching the online component of higher education.

We anticipate that the survey will remain in use indefinitely, with new data added each year for as long as VLEs remain a subject of interest. Review of the survey tool has recently include other online learning tools, while trying to strike a balance between the value of being current and the need for consistency over time in a longitudinal study. We have also successfully piloted a staff survey which will be used to capture the perspective of staff users of the VLE. As with the student survey, the development and deployment of a common staff survey instrument will enable a broader understanding of the issues. This collection of students' views challenges the common view of VLEs as a "mere" information distribution pathway, and justifies how they add value from a learning perspective. The importance of facilitating greater access to learning resources should not be underestimated, and the views that students have widely expressed in this sense clearly support this point. From our findings, the priority for educational developers is likely to gravitate around good curriculum design and the quality of the learning experience, and efforts and resources need to be invested around building human capacity to make this possible. Renewed and focused energy and direction on the part of educational developers can translate positively to academics using VLEs.

The large representation of the data collected at national level opens the possibility of international participation to add a cross-national dimension to the data analysis. We welcome additional participants to join the project team, from Ireland or overseas. If your institution is interested in becoming involved, please contact any of the authors.

Research method

The survey instrument itself consists of 20 questions, some of which have a large number of sub-questions. The design incorporated a mix of yes/no and Likert question styles, often addressing similar issues in different ways in different questions to accurately triangulate the students' perspectives, and a mix of positive and negative questions to avoid common survey design bias pitfalls. In addition to the quantitative data, there are a number of open-ended questions that enable the respondents to provide more depth and context to their input.

The participation agreement outlines the design and methodology for a student survey of VLE and online learning usage. Ideally, to facilitate comparisons, the survey instrument should be identical, but in practice, it is intended that this survey can be used with minor modification, in whole or in part, by any institution wishing to learn more about its student VLE usage. Some areas may be included or excluded depending on whether survey data from a respondent can be linked to VLE usage or registration data. In a particular institution, for example, quantifying volume and patterns of usage can be determined more accurately from VLE admin data, location of access from server log files, etc. Student perceptions can also be correlated with VLE access and configuration data to give valuable insights.

The survey should be carried out using an online survey tool (a template with all survey questions exists in the online survey system SurveyMonkey and can be shared upon agreement with the participation guidelines). To date, each participating institution has decided when during the year the survey is run, and for how long. In general, it is advised that it be run in springtime, so that

new students have had time to become aware of online learning resources, but clear of end of term and exams. Work has recently progressed in the group to standardise a window of time during the year for participating institutions to open the survey to students to enable greater standardisation of results (and provide clearer focus to those running the survey).

Ethical considerations

This dataset contains much data of a potentially sensitive nature for lecturers, support staff, students and institutions. The project aims to strike a delicate balance between opening these data to researchers and guarding against any potential misuse of the data. To this end, the dataset is not completely open so as to protect stakeholders, primarily the participants, and this was a condition of ethical approval obtained for conducting the study. However, the study is conducted in a spirit of openness and no researcher who has approached the group in good faith has been denied access to the data. Running the survey and submitting new data is the way we have hitherto measured this good faith. However, there is no reason why a researcher who agreed to the ethical terms of use might not demonstrate his/her good faith in some way other than running the survey and contributing the data and thereby, for example, get a copy of the data (without the institutional identifiers). We admit that the term open here is not without conditions, but we do believe the project to be one built on principles of openness and our main aim with the publication of this data paper would help grow our research community by giving more people access to the data.

New researchers approaching the project contacts (see http://ilta.ie/activities/research-projects/) wishing to access the dataset and/or contribute new raw data to it will be presented with a participation agreement. This agreement specifies that data are pooled to the dataset on condition of institutional anonymity and under the commitment that inter-institutional comparisons will not be published or exploited for marketing or recruitment purposes. No institutions should be identifiable from the results. Presentations and publications are to be agreed by all members. Data protection issues are to be addressed by stripping all individual identifiers out before pooling the data and ensuring the students are aware of what the data was being used for. Participating researchers are responsible for seeking approval from Ethics Research Committees in their respective institutions. Under no circumstances should student identifiers (eg, name, student ID, lecturer) be included in submitted data. We take no responsibility for data protection issues arising from inadvertent submission of identifying data to the common data pool. All data from questions that allow free-text responses should be manually checked before submission to the pooled dataset and carefully anonymised in case respondents name an individual (such as a lecturer).

Limitations

The project draws on data from a student survey instrument, and that like many datasets, comes with specific caveats and biases which must be noted. Surveys were conducted online, with the survey instruments generally disseminated via both email and announcements within the VLE system. Response rates varied from institutions to institution, from 18% to as low as 4%. As a self-selecting sample, this necessarily creates biases. Students with high digital literacy are more likely to respond; and as a survey on VLE usage, non-users of the VLE are likely to be underrepresented in the sample. The data have not been weighted in any way, so institutions with large numbers of respondents may be overrepresented.

These limitations need to be kept in mind when interpreting the findings and can be compensated for in future research by drawing on system level data captured by the VLE itself, for example, the proportion of registered students who log in regularly, the proportion of modules with activity and so on. A more complete picture of VLE use can arise from a 360 approach to system data and

learning analytics, staff survey data, student focus groups, key informant interviews and random sample staff interviews. While it is not practical to conduct large-scale evaluation projects longitudinally in all our institutions, there is scope to add additional methods to add depth and robustness to the dataset.

Statements on open data, ethics and conflict of interest
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