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Students as bridges: Translating the student voice for effective curriculum evaluation

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This paper shares the experience of a student led curriculum research project in a regional university. Overall, higher education (HE) curriculum development, design and evaluation are exclusively an academic exercise. Very often curriculum and discipline experts create sequences of learning for students without any real engagement or consultation with the student body who will undertake the program or courses. Any recognition to a student voice in curriculum (re)design is often limited to formal and informal course evaluations, which have become problematic due to systemic issues of low response rates and potential for extreme feedback. This student led curriculum project suggests a different model for student feedback (student-lecturer as partners) and one that can leverage a new dialogue space (student to student) to foster more accurate and authentic feedback. The setting for this project is exploring the use of new visualisation technologies at the University of the Sunshine Coast (USC). In these enhanced learning spaces, USC is developing in-house knowledge about how to effectively use simulation, immersive and collaboration-based learning activities. The '*Student as Bridge'* model used for this research leverages a 'plugged in' peer-to-peer interaction and 'student as researcher' observation in classes using this new technology. This paper proposes that a 'student as bridge' model increases the authenticity of feedback and is a strategic shift away from viewing students as passive consumers of curriculum towards a view of students as stakeholders and partners.

Keywords: student voice, student as partners, curriculum evaluation, engineering

Introduction

The primary aim of this project was to investigate the effectiveness of learning with embedding visualisation activities into three physics-related Engineering courses at USC. A further aim was to recommend strategies for the continued integration of sim/vis into the Engineering curriculum to further support student learning. A learning and teaching research project led by an Engineering academic and an Academic Developer was set up with the anticipation of tracking student learning improvements with the use of sim/vis over a five year period starting in 2014. This project included collecting surveys at the end of semesters and collecting feedback on how the course met learning outcomes and direct questions regarding the effectiveness of technology to help students in their learning. This project was slowly progressing and results were not as significant as predicted.

USC is the first tertiary institution to use the CAVE2™ for teaching and learning, where three others exist, at this time for strictly research-related purposes. The "CAVE2™ provides a

near-seamless, 320-degree, immersive, panoramic, immersive 3D virtual environment" (Mechdyne, 2017). USC also houses a collaboration studio, which contains a high-resolution display wall in a room with collaboration tables and networked computers. At the time of this research, the visualisation facilities were only utilised for teaching and learning in Engineering courses.

Current feedback processes at USC involve different evaluation layers. At the institutional level, students in each course can choose to provide feedback via an online survey released to students digitally. This is designed to occur for each course throughout the university at least once a year. In addition, course coordinators are encouraged to collect ongoing feedback from students on how the learning is progressing and if there are any issues with course delivery. This is an informal process and varies across courses and disciplines. Specifically in the Engineering program, the original learning and teaching research project was set up to map the impact of the new technologies on learning and a paper survey was used in the final weeks of the course in class time and was deployed by a neutral research assistant. This project had been running for two years and delivered mixed results. No recommendations were generated and the academics were offered the compiled data in reports for their own use and quality enhancement pursuits. Fortunately, half way into this project, one of the Engineering academics had a science student who was also studying education and was interested in technology and learning. This fortuitous meeting resulted in adding a further layer to the evaluation process through leveraging a student led curriculum evaluation sub-project.

What do we know about student voice in HE?

There is limited literature looking into incorporating the student voice in learning and teaching projects. Campbell, Beasley, Eland, and Rumpus (2007), in their multi-institutional report on hearing the student voice, clearly advocates for the expanded use of student perspectives in enhancing academic practice and learning experiences of students. Their research revealed several ways to enable the students to be heard including: student-lecturer focus groups, student surveys on their learning preferences, mini conferences, collection of video commentaries, creating student voice scripts of their learning experiences for academics to hear, creating Vox pops and student focus groups with a neutral staff member and translating this dialogue to a written narrative (Campbell et al., 2007). There are numerous quotes shared in this report attesting to the underused but valuable source of constructive feedback that students can offer. As exemplified in the following quote:

> Bringing together of faculty and students for discussion of the process of teaching and learning in which they are jointly involved (rather than the usual focus on the content of the curriculum) is as rare as it is valuable (Asmar, 1999 cited in Campbell et al., 2007).

Despite this overly encouraging comment, the realities of eliciting student feedback on courses is fraught with multiple barriers including: power differentials, analysing student voice from a point of difference, the framing of the collection of student feedback (negative, (in)valid, emotional), inauthentic or mechanistic tools used to collect feedback which is distanced from the real or lived classroom/learning experience; and finally the squeezing of multiple student voices into quantifiable single terms or scores (Darwin, 2016). What is left of the student voice in this mess? If we look towards ideas and guidance from a methodological perspective we see gains in understanding voice in qualitative inquiry. Mazzei and Jackson (2012) unpack this issue in a paper called "Let participants speak for themselves", which is a

radical juncture and requires some reflection on how this would work for feedback rather than research. Of interest here is the issue of the crisis of representation (Guba and Lincoln as cited in Mazzei & Jackson, 2012). This crisis highlights the 'polyvocal and multiple nature of voice' and problematises how academics can best access this important but complicated resource for curriculum renewal and improvement.

Mazzei and Jackson (2012) argue for a type of 'plugging in', which for them is about opening up to multiplicity across the range of spheres of experience – voice, body, sound, context, environment and text. Therefore, key to 'plugging in' is understanding voice as both multifaceted and as an effect of translation. This turn requires academics and institutions to consider the nature of translation in the collection and interpreting student feedback. Bourke and Loveridge (2016) state that:

> Learning as a phenomenon is understood differently by teachers and their students, and the views of each are shaped by their respective roles and focus on what is important 'to learn' (p. 59).

Recognising translation as a problematic offers new trajectories and areas of exploration in how to reconcile the chasm between the site of academic's pedagogical and historical 'ways of doing' course delivery work and their interpretation of student feedback to the territory of the student's actual experiences and how they have chosen to represent them in feedback (Bourke & Loveridge, 2016). This chasm can be understood as a cultural gap between students and academics.

Accepting that analysing and making sense of student feedback is an act of translation between two cultural worlds, the next question is 'are all translations equal?' and 'are some translators more able to produce an effective translation? These questions follow the work of Wong and Poon (2010) who ask three different translators to translate a recorded discussion from Cantonese to English. Not surprisingly the three translations were different. However, and important for this paper, their findings support the practice of finding "co-investigators or research associates from the communities of the research area" (Wong & Poon, 2010, p. 156). We are calling this co-investigator or research associate a 'student bridge'.

The student bridge model is proposed to narrow the translation gap for student feedback on course or content revision/enhancement. Recognising that an educator-focussed approach may rely on an 'illusion of equality' (Mcleod, 2011 cited in Brooman, Darwent, & Pimor, 2014) a student intermediary collecting student feedback on a course should address some of the power and structural impediments of the traditional model. Students listening to students about their learning experiences leverages both peer-to-peer empathy and peer understanding of learning experiences and decreases the translations error as it is delivered up to the academic partner in this arrangement. Further, collecting and collating these experiences from a student's perspective and then translating these experiences and discussions into recommendations enhances the strength and alignment to 'the student voice'.

A new model: Students as bridges

Students are key stakeholders within tertiary institutions and are frequently at the receiving end of university decisions. Often there are opportunities for students to engage in leadership or peer-to-peer programs which aim to enhance the student experience. These include academic peer support programs, community ambassador roles, peer mentoring and student

governance positions. These aforementioned programs aim to enhance the student experience, but seldom do programs or initiatives exist for students to take a leading role in curriculum transformation.

In this case study, the 'students as bridge' model, was driven and supported through a graduate level AQF7 Special Research Project course supported by a discipline expert. This structure was important as it gave real value to the student's work as they received graded credit on the report. The course structure included time for co-development of outcomes and methodology with the accompanying academic and a schedule of contact hours for the research student. Key in the success for this project was the combined background of peer work the student already had and the significant rapport found across the associated academics involved in the research. This rapport is an important characteristic of the 'student bridge', as it assists in narrowing the translation gap that often occurs with traditional feedback mechanisms. The student collaborator's identity in this case was built on their extra-curricular engagement in student affairs at the university, their experience within the discipline and a keen interest in curriculum.

The basic structure of setting up the 'student bridge':

- Student collaborator
- Special research project (SRP) course (12 Units)
- Discipline academic support to gain entrance into the research classrooms
- Teaching and learning research structure embedded into SRP course – Ethics and survey design and approval
- Support from an Academic Developer
- Final report submitted for evaluation (course credit) and then submitted to academics for their review

Student as bridge: In my voice

I am a fourth year undergraduate science and education student. I am familiar with the courses offered in the Engineering program as a result of my degree discipline knowledge and my work as a peer mentor in physics. I was interested in the Engineering visualisation facilities and wanted to explore how these facilities improved student learning and student learning experiences. I had room for a research elective in my program so I consulted with an Engineering academic who I was familiar with due to my role as a 2015 Peer Assisted Study Sessions (PASS) leader in first year physics. Once the official structures of the research course and expected outcomes were established with the academic, I then directly collaborated with an Academic Developer who had already been collecting data on Engineering courses. The course structure required set contact time which was used to set up the research methods and connect with other Engineering academics involved with the visualisation facilities. Conducting this learning and teaching research through a SRP course worked well, as I was enabled to design and lead the research but was supported by the academic and Academic Developer along the way.

I am actively involved in university life and am passionate about enhancing the student experience and supporting fellow students. In the university context, I have supported peers in academic support activities such as Physics laboratory classes and as a peer mentor through the university's PASS program in the semester prior to conducting this project. Participation in these aforementioned activities reinforced my identity as a peer mentor and established trust with my student peers in the researched classes.

I changed the original structure of the Engineering study research project to include a focus group discussion and class observations by myself. I felt that if I was to gather a student perspective, I needed to experience the learning and teaching environment directly. Also I found the nine questions fairly uninspiring and obviously written from a course performance perspective rather than really finding out how the student experience was.

I structured the study differently in order to collect more data on the experience. Throughout the semester, I attended classes of three focus courses and made observations about the feel, level of engagement of the students and how I felt the academics connected to the students in the class. I retained my student identity and made observations from a student perspective. In doing this I leveraged my prior classroom experiences to recognise peer behaviour in class in response to the classroom dynamics. I also was involved in some class activities and noted that when this occurred, it helped increase rapport with other learners, and enabled a closer look at lesson design and engagement actives.

Towards the end of the semester, I used the pre-existing survey to collect feedback from my peers and I decided I would also create two extra open-ended questions. These two questions were specific to the courses I observed, and used my observation notes to tailor these questions for the course to gather more significant feedback in relation to the integration of visualisation technologies. The survey questions and these extra open-ended questions were completed by peers with the lecturer leaving the room for 15 minutes which promoted a safe environment to provide authentic feedback. I then conducted a thematic analysis of the data collected. The output of this analysis led to the development of a schematic which illustrated the key influences I found on the integration of visualisation technologies in learning and helped to frame my recommendations for the academics. I completed a literature review prior to conducting the student facing research.

Student voice: Findings from the frontline

In this case study, the student collaborator developed a schematic illustrating the key factors impacting student learning experiences with visualisation technologies according to the student voice data. Interestingly, the framework places the learners as just one part of the overall dynamic of the learning experience. In essence, multiple factors affect learning, which wider research would support, however the interesting observation here is the prominent role the lecturer takes in shaping learning experiences even with heroic or mega visualisation technologies being used (Figure 1).

The four domains outlined in figure 1: lecturer, learner, usage and artefact, surfaced as key themes or nodes in the student voice data. These student centred domains are all concerned with how the technology was used to inspire learning and greater understanding. The interesting displacement of the learner is indicative of students seeing themselves outside of the learning processes enacted when visualisation technologies are used. The recommendations indicate the lecturer needs to display competence with the artefact and the technology and that the activity itself should be aligned with assessment. This highlights that students want transparent, unencumbered experiences that align with concepts and knowledge they need to gain and demonstrate. Usage from a student's perspective is also really interesting. One time exposures do not seem to inspire students and give the experience more of an entertainment feel. It was clear in the learning sequences observed where these factors

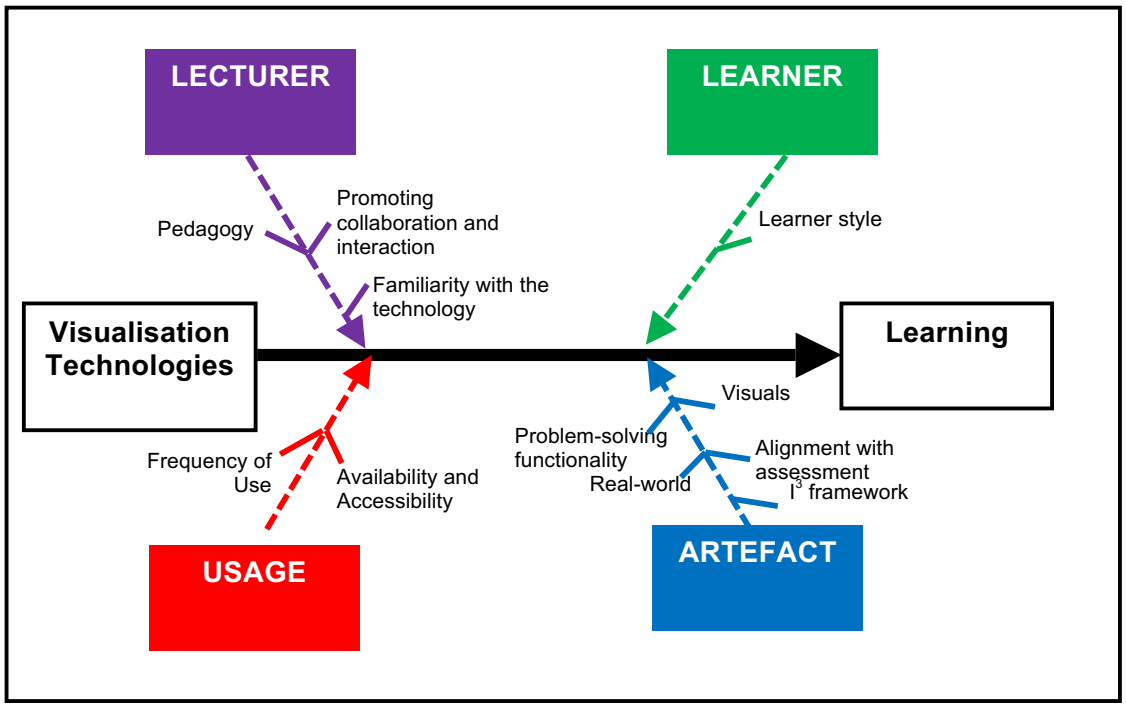

Figure 1: Key factors in promoting peak student experience with simulation technologies

were not met, students indicated that they would have learnt the same content or concept better without the visualisation technologies implemented – which were a distraction.

The table below summarises some of the key recommendations developed by the student collaborator.

Table 1: Summary of findings

Domain	Recommendation	Description
Lecturer	Discussion	To implement engaging strategies to facilitate discussion – in contrast to saying "this concept is how it is".
	Assessment	To consider aligning visualisation experiences with assessment tasks.
Learner	Engagement	To consider strategies to increase interaction or opportunity to interact with learning material.
	Can I do this?	To check in with students' background knowledge and skills to make sure no barriers exist to learning.
	Immersion	To use visualisation to elicit imagination.
	Control	To hand over control of artefacts to the learners in order to increase interaction.
Usage	Frequency of Use	To consider strategies to increase the usage of the visualisation facilities.
	Revision	To incorporate strategies to allow students to revisit the technologies used for learning purposes.
Artefact	Problem-solving	To incorporate a problem-solving functionality in artefacts – students suggested that it would increase learning accountability.

Reflections on student as bridge recommendations

On the surface there appears to be some differences in the types of comments and orientation of the feedback from an academic led feedback process to a student led feedback model. Specifying the differences in qualitative or quantitative terms is outside of the scope of this paper. However, generally there seemed to be positive, longer, detailed and careful responses collected by the student collaborator. In addition, the observational data and the peer-to-peer discussion on key aspects in the courses created more depth and verisimilitude in the recommendations. Key factors that may account for this difference, however more research is needed, are:

1) Identity and relevance – Learners in the course knew the student bridge through their extra-curricular engagement in academic peer programs at the university and as an experienced student within the discipline. Also the familiarity of the collaborator led to close translations of the student voice and experiences.
2) Meaning and reassurance – When entering the classes to collect feedback from the students, the student bridge indicated to peers that their feedback would be used to improve the Engineering curriculum in future years. Students appeared to recognise that as a peer, the student collaborator was interested in their learning experience and created an awareness that writing more meaningful feedback would improve practice.
3) Peer-to-peer empathy – As the student collaborator would be responsible for collating and reading the feedback, this may have created an awareness that a peer would be reading this and as such would be more able to relate to and empathise with the student's perspective than an academic would.
4) Observations – the observations in class were made from a student's perspective and generally focussed on – Am I engaged? Are the students around me engaged? Is there confusion? Can I understand the flow of the lesson? Did I think other students were learning?

Students as bridges: Summaries and new connections

Bridges are fantastic structures. They come in different shapes and sizes and span a diversity of waterbodies and lands. Simply, they connect inaccessible sites. Bridges provide passage, increase connectivity, facilitate movement and transition the flow of music, people or things. For this paper, a bridge is an appropriate metaphor for this student collaboration project. At the beginning of this paper we hear Ramsden (1988) suggesting that "*good teaching means seeing through the learner's eye*". For academics and curriculum specialists to do this they would need a way into this student eye, they would need a way into what is arguably an inaccessible space. This is where the student as bridge project works. Student collaborators can go and see where we can not. Furthermore, they can bring back an experiential narrative that cannot be reproduced by other means. In this model we are proposing that to design for 'plugged in' student feedback requires a research course structure; academic support and an organised feedback mechanism must also be in place.

In this project we have invited the learner's eye into the sanctum of curriculum delivery model and it has shown that this is an under-tapped resource (Campbell et. al., 2007). Key characteristics of the student collaborator that lead to the success of this model are:

1) A graduate level research project course that can be used for different applications.
2) Student collaborator from a related discipline to the courses evaluated
3) Student ability to take leadership and autonomy with the data collection and analysis
4) Productive and collaborative student-academic relationship

5) Student collaborator with an interest in learning and enhancing the student experience

For this particular paper a science and education student, familiar with the courses offered in the Engineering degree, was interested in investigating the impacts of a significant technology investment to improve student learning. What emerged was the benefits of using an 'insider identity' to gather information and feedback from students and also to sit and experience learning and teaching real time with an authentic student lens. It is argued that this insider view enabled freer feedback and conversations with the student cohort and allowed for a 'plugged in' student centred analysis of the learning experience. Specifically this model harnesses an empathetic student view that can translate the student voice with greater accuracy.

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