Student and Lecturer Perspectives Informing an Academic Support Strategy to Assist Students in a Medium-Sized Tertiary Institution

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Abstract

Students and lecturers rarely have the opportunity or autonomy to reflect upon and critique the roles that each party plays in the learning and teaching environment. This paper draws on the perceptions of undergraduate students and lecturers in a medium-sized tertiary institution in an urban area of New Zealand in relation to the learning community and levels of student engagement. Third-year students in their final year of study shared their perceptions of their learning and teaching environment. Simultaneously, lecturers shared their perceptions of student engagement and academic skills development during the course of their degree. This paper evaluates the learning environment and investigates the gaps between learner and teacher expectations. The outcome of this study is informing on-going development of an academic support strategy to enhance critical and analytical thinking and student engagement in learning. The research team also used study findings to inform the continued development of a revised undergraduate degree curriculum. This research emphasises the importance of student voice. The shared insights of lecturers and students will inform further action research stages of this project.

Introduction

Researchers have argued that, in a traditional teaching model, students rely heavily on the teacher for assessment structure, direction and feedback (Bergström, 2010). This in turn influences the learning process, particularly increasing the demands students make of their teachers. However, it has been suggested that independence in the student-teacher relationship occurs when students have some autonomy in their learning environment (Bergström, 2010). The current project favours a shift towards a more student-centred model where students understand the pedagogical intention behind increased openness and responsibility towards their own learning and learning environment. Engaging in a collaborative learning environment through dialogue between lecturers and students in class, and the application of theory into practice, encourages understanding of each other's positions and involvement in active learning on both sides (McDuff, 2012).

To engage students in their learning, we must understand what actually motivates students to learn. If lecturers meet students' preferred learning needs, students are more likely to be engaged in their learning, and deeper learning can occur (Jang, Reeve, & Halusic, 2016). A motivational theory widely used to examine student motivation in academic contexts is Self-Determination Theory, or 'SDT' (Ciani, Sheldon, Hilpert, & Easter, 2011). SDT, originating from the ideas of Deci and Ryan (1985), argues that social conditions can largely determine whether individuals are passionate and engaged or passive and unengaged (Beattie, 2014; Ryan & Deci, 2000). An environment that nurtures positivity needs to be adjusted to the skill-sets of participants, and simultaneously foster ownership of the learning experience. Ryan and Deci (2000) noted that, for individuals to function optimally and be self-motivated, three innate psychological needs must be met: competence, autonomy, and relatedness. Niemiec and Ryan (2009) suggested that, within the educational environment, autonomy can be fostered by offering learners choices and reducing pressure and control. Competence can be achieved via encouraging feedback and setting optimally challenging but achievable tasks, which Csikszentmihalyi (2014) called *flow*. Finally, Niemiec and Ryan (2009) argued that relatedness can be achieved by developing an environment that is warm, caring and respectful to participants; a safe environment for both students and educators. The educational environment can either support or thwart the meeting of these basic needs.

This study reports on a collaborative project that involved cyclical, iterative stages. The research, conducted over two years, involved academic staff and students in a medium-sized tertiary institution in New Zealand. It was designed to both reflect on and inform the development of a revised undergraduate sport and recreation degree at our university, which has been running with five 'majors' since 2006, plus the addition of a sixth 'major' in 2009. During that time the programme has grown from a generic sport and recreation degree to now offer students the option of majoring in one of the six areas. The offering of 'majors' has been seen as a strength of the programme, allowing students the option to pursue areas of specific interest. However, this growth has added considerable complexity to the programme, with six diverse majors attempting to meet the needs of a common graduate profile. Consequently, programme objectives were recently re-identified. At the same time, both students and academic staff recognised that a rapidly changing sport and recreation industry requires reconsideration of the skill set required by today's graduates. The aim of this study was to collect, analyse and respond to student and staff perspectives on the undergraduate learning environment, and to inform strategies designed to support the development of students' academic skills.

This research reflects the research team's desire to engage students with their lecturers in a shared learning community. Bovill, Bully and Morss (2011) suggested lecturers and students benefit from building relationships and connections with one another during collaborative curriculum design. Collaborative design in this context informed the creation of a learning environment in the revised degree by drawing upon learner input to inform teaching practice and place the responsibility for learning with the learner (Blashke, 2012). Drawing upon student and lecturer voices, this study represents the first phase of a project aiming to enhance the existing teaching and learning environment for all students and lecturers of an undergraduate programme.

As a strategic practice, the undergraduate programme has been re-written. Curriculum development in new and revised papers was initiated as a reflective process for teachers. The aim was to support a community of learning in response to student feedback on their learning experiences. Overall, a range of teachers across a variety of subjects, therefore, began to focus more on facilitating an environment that nurtures the development of learner capacity and capability, as opposed to delivering content knowledge. This shared intention aims to create an environment where learners become more capable life-long learners and are equipped with the

transferable competencies and skills needed to meet the challenges of today's complex workplace.

The iterative and collaborative nature of this research project draws on the principles of action research. Focus groups with lecturers and with cohorts of students were conducted in the early phases of the research, followed by surveys and in-class discussions. The responses from staff and students directly informed and implemented the learning support strategy carried out in a range of papers in this degree over a two-year period. The project is on-going and further phases are currently being implemented to embed academic support strategies, as well as a curriculum re-design process within a revised degree.

Methodology

Action research is concerned with the welfare of people and communities and strives to promote social change (Brydon-Miller et al., 2003). The phases of the project are driven by the researchers' desire to create a humanistic learning environment that reflects student needs and desires and nurtures self-motivation. This theoretical underpinning relies on the principles of andragogy, specifically some of the key principles identified by Knowles (1984): These principles including adult learners in the planning and evaluation of their learning environment; creating environments that encourage experiential learning; connecting subjects' relevance to learners; and encouraging a learning environment that is focused more on problem-solving than on content. Despite significant academic debate on the notion of andragogy (Knowles, Holton, & Swanson, 2005), we argue that the work of Knowles (1984) still offers a sound basis for this study. There is close alignment between the principles identified by Knowles and our desire to create a meaningful, relevant learning environment informed by the desires of learners' themselves.

Design

The design of each of the six phases of this research drew on action research principles. *Phase one* included an exploratory semi-structured focus group interview with a convenience sample of three final-year students and a focus group with lecturing staff.   *Phase two* involved the research team's analysis of and reflection on the focus group findings and informed the design of the remainder of the study. *Phase three* involved consultation with a class of 18 final-year students,

which took the form of a workshop where students were invited to construct the questions that would inform the subsequent focus group questions for their peers. These questions were intended to elicit student perceptions related to their teaching and learning environment. *Phase four* saw these student-designed questions being used to guide discussions in seven final-year student classroom-based workshops. *Phase five* provided an opportunity for students who had decided not to participate in these workshops to complete an equivalent online survey. *Phase six* involved the research team's reflections on the findings, which inform and will continue to inform the design of the learning environment.

All face-to-face interactions with students were conducted by members of the research team, who did not teach or assess these students at the time of the study. The size and duration of the focus groups were determined on the basis of recommendations by Krueger and Casey (2000).

Phase one: Focus groups

All lecturers (N=40) involved in the design and delivery of the degree were invited to participate. A 75-minute focus group was subsequently conducted with seven lecturers who volunteered to participate. A semi-structured list of questions was designed to elicit lecturer perspectives of the teaching and learning environment; how learners could be better prepared to meet the school's graduate profile; and how students responded to the current teaching environment.

Similar semi-structured questions were also used to guide a pilot 60-minute interview with a convenience sample of three final-year students. Students were asked to comment on the teaching and learning environment; how their learning experiences helped them meet the graduate profile; and the efficacy of their teaching environment.

Phase two: Researcher analysis

Research team members' reflections on the findings of the student interviews revealed that the questions had not prompted responses of sufficient depth about students' perceptions of their learning environment to inform strategies designed to support the development of students' academic skills.

Phase three: Consultation workshop

A workshop was held with one class of 18 final-year students, to design a list of questions that would be used to guide discussions with classes of final-year students.

Phase four: Student classroom discussions

The questions designed in phase three were used to guide research team-led discussions in seven final-year student classes. Class sizes ranged between 20 and 55 students.

Phase five: Surveys

An electronic survey, containing the same questions as in phase four, provided an opportunity for students who had either opted out of or missed the classroom discussions to participate. This ensured that all final year students had an opportunity to contribute to this research.

Phase six: Reflection and implementation

The findings of this study have informed and will continue to inform the on-going design of the curriculum and shape the learning environment at our institution.

Data Collection

To alleviate power imbalances in the researcher-student interactions, the interviewers in the student focus groups were academic staff who were neither currently teaching nor assessing these students, nor would before they graduated.

Ethical Considerations

The study was approved by our institution's research ethics committee (14/139).

Data Analysis and Rigour

The focus group meetings and classroom discussions were audio-recorded and fully transcribed by a research assistant. The data were then sorted into key themes and sub themes as detailed below; the learning environment, learning and teaching strategy, practical application, student community and sense of belonging.

This represented the first phase of analysis: researcher familiarisation with the data (Wolcott, 1994; Braun & Clarke, 2006). The principles of SDT (specifically the three basic psychological needs) identified by Ryan and Deci (2000) were used to interpret the data that emerged. To achieve cross-reference rigour, two researchers independently analysed the data, then met to discuss the cross-validation of the themes that had emerged. The research team then cross-referenced the themes that emerged from lecturers with those from students.

Results

The initial results of the small exploratory focus group suggested that students had not had an opportunity to express their thoughts towards their programme in sufficient depth, so we expanded the exploratory phase to further explore these. The next phase was to gather larger numbers of student responses with more applicable focus group questions. Therefore, we asked a class of final year students to design questions that they would want to be asked of themselves and of their peers. The questions they developed were open-ended and focused on five main areas: structure of the degree (four questions); teaching and learning environment (two questions); rationale for choosing the degree (one question); relevance to industry (one question); and a sense of student community (one question).

These questions informed the emergent themes, as summarised below. The main themes related to the learning environment; learning and teaching strategies; practical application of skills within the classroom and industry context; the student community, and sense of belonging to the undergraduate degree community.

Students' results

The learning environment

Due primarily to the complexity of the programme and timetabling constraints, lecture times for students varied depending on their majors. Students were critical of the structure of some of their timetabled classroom experience, and found three-hour lectures too long. They proposed lectures be reduced to 45 minutes, with the remainder of their required learning time spent in smaller, more interactive workshop settings, as represented by the following classroom discussion comment:

> I hate sitting in lectures followed by workshops which extend over a few hours. I would rather have a short, compact 1-hour lecture which just provided information, a short workshop with exercises putting the theories into practice if possible and then extra online articles which go over critical factors around the subject. (Student 1)

Students also disliked being 'talked at' and suggested having more interactive sessions with a range of teaching strategies. For example, one student in a large classroom discussion proposed that lecturers:

> Make it different, make it unique… it sounds clichéd but I want the lecturers to make me want to come…I want more guidance learning, more inquiry learning… it feels like we are just getting taught, taught, taught what we are learning. (Student 2)

In another classroom discussion, students collectively shared their preference for less time sitting taking notes from PowerPoints and proposed that learning be more guided and student-centred.

Learning and Teaching Strategy

Many students wanted their classes to be interactive but commented that the teacher-centred classroom led to students being afraid to answer questions. They said they felt intimidated about asking questions or speaking up in classes for fear of "being wrong."

> Year one could be more interactive to be honest, in this lecture theatre right now I am really intimidated to put my hand up and talk, just saying anything in front of you guys… smaller groups or classes… (Student 3)

Students acknowledged that teaching styles varied, but overwhelmingly called for a more student-centred approach to learning and teaching as opposed to lecturers pre-determining content and method of delivery. Students made it clear that they often did not feel engaged or feel responsible for learning until they took a specific third-year philosophy paper. The proposed having more have student-centred, student-initiated topics and learning approaches as well as question and discussion techniques (to be practised in class) so that student voices and learning preferences led their learning style and gave them ownership of their learning. They said they felt they were "told" or "talked at" and sought more autonomy, which would recognise their diverse learning styles. They wanted to learn how to identify with their own learning styles and what works for them, then practise in a more interactive learning environment. Students wanted

to be taught in a manner that resembles how they might lead, coach, facilitate or manage in the future: in other words, for the learning experience to be more closely aligned with real-life industry experience.

There was also a feeling that a teacher-led environment results in a culture of learning that is assessment-driven, where students attend lectures to "be told" what they will be assessed on and the focus is more on passing exams than on actual learning. These students wanted strategies that allowed for more questions and small-scale discussions amongst peers. Students sought opportunities to lead sessions or activities and to get into the habit of speaking by "practising answering questions" – and felt they would be more engaged in their learning if they could also "practise" guiding or facilitating sessions. There was a clear call for smaller, more interactive sessions, with more applied learning. Participants proposed that this be facilitated by a more student-centred approach to learning, shifting the emphasis from an assessment-driven to an applied learning model.

Practical application

A number of students recommended embedding practical applications of learning throughout the entire degree:

> I prefer to learn through practical application and small group workshop-style sessions. This way you get to explore more for yourself, and gain confidence to connect to others (including the lecturer). This also enables and empowers [students] to have greater confidence in their learning and speaking up to ask questions [towards] further understanding. (Student 4)

Students repeatedly commented on how the passive lecturing style of teaching deterred engagement, to the point that some even considered leaving the programme after their first or second semester: "Practical based application is essential, [in our physically inclined degree]" (Student 5). A proposed solution would be to integrate practical learning into workshops or assessments: practical laboratory sessions, small group workshops, and shorter lectures.

Regarding specialist learning spaces, students requested increased use of sports facilities for learning. They proposed having more access to a contemporary venue used in the industry. Even if such opportunities were infrequent, students commented on feeling valued by being able to share these spaces and make research and industry connections. Retrospectively, degree graduates made comments like "I thought that when I came here it was going to be a lot more

practical… more hands-on than it actually was… like exercise science, actually having more time in labs" (Student 6).

For successful entry into the industry, students' kinaesthetic learning needs must be met, not through delivery in a seated lecture theatre with written assessments and an emphasis on listening and note-taking. Students identified a need to incorporate activities into their learning environment. One suggestion was to have a practical paper in year one. They also felt active learning and small-group, practical activities would help to create a culture of learning and engagement, and foster learning approaches that could be continued outside of the formal learning environment or within their chosen industry. When reflecting on their classrooms and access to learning spaces, one student suggested that "getting more hands-on time doing the testing, [would be motivational] especially for people who want to do the post-grad stuff" (Student 7).

Student community and sense of belonging

Another dominant theme to emerge was student culture. Students were critical of the lack of a sense of belonging within a "cohort". There was a lack of opportunities to develop relationships with peers during the initial undergraduate years, although, by the third year, students had often become friends with peers in their 'major' through small workshops or group assignments. Large classrooms were not conducive to nurturing a sense of relatedness unless students had small group assessment tasks to complete with peers. They felt intimidated in large classrooms. Not wanting to speak up and not making friends with classmates in their first year exacerbated this lack of a sense of belonging. They were clear that fostering a sense of community enables learning:

> You [should] keep everybody in the same classes throughout the entire programme so you really get to know each other. Without creating small groups, you don't really get to know anybody. Group work helps. (Student 8)

Students felt that being put into small groups would encourage them to attend similar lectures or workshops and therefore provide a peer support network. Another suggestion was to have a first year student camp outside of the formal learning environment to develop a sense of culture that could transfer back into classroom learning. A need for sense of community was

identified" "I've got a class [on a smaller campus] that is maybe 15 people, and in the second week we knew each other. You talk to the same people…" (Student 9).

Having access to a shared space was a challenge on the larger campus, which does not have a hub for social activities. Students based on the larger campus more commonly experienced a lack of "university culture", but believed that such a culture would promote a sense of "student pride."

Lecturer results

Understanding academics' perspectives was also key to reflecting on the teaching and learning environment. Seven lecturers participated in a focus group, which took place in between the first student focus group and the second, for which third-year students created new questions. The lecturer focus group had a semi-structured approach, so, while a series of questions was prepared, some freedom was given to participants to express their views on other topics.

The learning environment

Students' engagement with learning activities was widely discussed, with lecturers noting a lower level of engagement in larger student cohorts, with students seemingly reluctant to participate. From these lecturers' perspectives, students were either insecure and afraid to be wrong or happy to just listen and not engage:

> I get that impression from some of them. Sometimes they come to your paper and they sit and listen. I know you're trying to challenge, but they're quite happy not to be challenged. (Lecturer 1)

Additionally, lecturers felt the learning environment contributed both positively and negatively to students' ability to adapt to changing and novel situations. From one perspective, students' exposure to different lecturers with different lecturing styles, different assessments, and different content, was perceived to contribute to the development of adaptability. Group work was also identified as developing adaptability, as was the final year Cooperative Education/work integrated learning (WIL) paper that contributed to workplace transition. However, participants noted some students' discomfort in adapting to new situations, such as problem-solving

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activities. This led to the reflection that learning is not necessarily a comfortable experience: meaningful learning also occurs when projects fail. Thus, the feeling from these lecturers was that academic staff needed to take advantage of opportunities to create a safe environment, finding an appropriate balance between fun and challenge.

Learning and Teaching Strategy

"It's that battle back down to, do we change for them? Or do they have to change for us?" (Lecturer 2)

There was some discussion on the role of digital literacy regarding learning and teaching strategies. Firstly, lecturers identified their own lack (or perceived inferior level) of digital skills, which might contribute to barriers in adopting technology in the teaching and learning environment. Secondly, while many students use digital devices to take notes, exams usually require pen and paper. Thus, participants agreed on the need for them to develop adequate ways to integrate pedagogy, content knowledge and technology.

Interestingly, lecturers highlighted that, although the expressions 'critical thinking' and 'analytical thinking' are widely-used in academia, not everyone shares a common understanding of their meaning. Furthermore, participants highlighted the lack of a commonly-accepted pedagogical approach within the School to develop such skills. Inquiry, discussion and participation were identified as key elements contributing to the development of critical and analytical thinking skills; however, they recognised the need to establish common understanding of what critical thinking is, and how it could be developed.

Despite some criticism of current teaching and learning strategies, lecturers felt the school had made a significant progress over the past decade. Lecturers reflected that the quality of the students' responses had increased, compared to several years ago, which they attributed to greater consistency of requirements.

English language ability was identified as a significant obstacle to students' success, mainly for non-native speakers. A perception emerged that low English language entry requirements contributed to this situation. Within the teaching and learning space, however, participants reflected on the importance of feedback, and how feedback should focus on positive aspects of students' work. It was acknowledged that most feedback provided to students is still negative, and an opportunity to develop was identified in this area.

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Practical application

> "When you're assessed in the real world, if you don't hit your KPIs, you lose your job."
> (Lecturer 3)

Academics acknowledged the need to provide practical application and real-world experience, even though the current structure did not always allow for this. Lecturers commented that only in their third year did students have contact with a paper that explicitly addressed leadership. However, it was recognised that leadership is a difficult skill to develop in a traditional classroom environment. Staff acknowledged that there was a need to enhance the opportunities for practical application of the knowledge.

It was also noted that the inclusion of practical aspects needed to take into consideration the final goal: "that practical component, it's got to have a purpose. [...] It's not just play-for-play" (Lecturer 4). Additionally, lecturers noted a substantial difference between intellectual and practical problem solving. Focus group lecturers observed that, while students were provided multiple opportunities to develop intellectual problem-solving skills in the classroom, these skills seemed less developed in applied settings. Lecturers expressed a need to increase opportunities for students' practical application of knowledge and real-life experiences.

Student community and sense of belonging

Perhaps not surprisingly, lecturers noted a substantial difference in participation and engagement between students from different campuses. In the campus where classes were smaller, higher student participation and engagement was noted, whereas, in the larger campus, levels of participation and discussion substantially decreased. This was attributed to how safe students felt in the classroom environment. From the lecturer perspective, students need a sense of community and belonging, to feel safe to make mistakes in a class where they know everyone:

> I find a difference between [Campus 1, where cohorts are bigger] students and [Campus 2, where cohorts are smaller] students. The [Campus 2] students that actually know each other really well are actually really comfortable about asking what potentially to them might be a dumb question. Whereas at [Campus 1], they don't ask questions. (Lecturer 5)

> This theme was mentioned by other lecturers also in relation to activities and ownership of the learning experience.

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Discussion

The results provided interesting insights in terms of motivation, from both students' and lecturers' viewpoints. An environment that supports an intrinsically motivated climate can enhance the learning process. However, the results highlighted that, to facilitate this, lecturers also need to have their psychological needs supported. In relation to meeting their basic psychological need of competence (Ryan & Deci, 2000), lecturers felt less proficient than students with regards to digital learning. So, while students wanted greater integration of digital tools with pedagogical approaches, both parties wanted to use technology appropriately. This suggests that further development of these skills would contribute to lecturers' feelings of competence and autonomy. Secondly, it was interesting that lecturers did not share a common understanding of concepts like critical and analytical thinking. Both lecturers and students wanted more discussion-based learning, which they perceived as a tool to develop common points of understandings in terms of critical and analytical thinking. Students suggested a greater range of learning and teaching approaches and proposed more opportunities for guided or inquiry-based learning that can develop an authentic learning environment (Herrington & Herrington, 2007). Both staff and students recognised the relevance and importance of practical application of learning. However, lecturers acknowledged that, while the inclusion of practical activities would have a positive impact in the teaching and learning environment, these would need to be planned and assessed based on learning outcomes, in order to maintain alignment among outcomes, activities and assessments (Biggs, 1996).

Lecturers and students also reflected on activities that could contribute to students' sense of autonomy. One of those related to reducing lecture time and providing a combination of experiential learning and interactive approaches to learning and teaching, which is appropriate in the context of a degree with potential practical application. The need for more practical application of learning is widely recognised (Beattie, 2014; Herrington & Herrington, 2007; Knowles, 1984). Students would like more time to problem-solve, which is connected to the development of an authentic learning environment (Herrington & Herrington, 2007). However, lecturers seemed to be aware of Bjork and Bjork's (2014) desirable difficulties, noting students' discomfort with problem-solving activities. Desirable difficulties (Bjork, 1994) include varying

learning conditions to avoid the predictable, interweaving topics, spacing study sessions on topics, and using tests, as opposed to presentations, as study events (Bjork & Bjork, 2014).

Providing students with more scope for problem-solving and real-world application creates opportunities for deeper autonomous learning. The lecturer's role is to ensure that this learning occurs in a safe environment, acting as a guide, and finding an appropriate balance between student ability and the learning challenge that is set. Addressing student needs is the most important factor for lecturers to consider.

Of the three aspects of SDT (competence, autonomy, and relatedness), we suggest that relatedness (Ryan & Deci, 2000) emerged most strongly from our analysis. Both students and lecturers agreed that larger cohorts are less effective in promoting connection with learning. Students felt safe working in smaller groups, which gave them confidence to participate, while lecturers also mentioned that connecting with learning in small group work seemed to be more effective. Both students and lecturers strongly identified with the need for an environment that nurtured this sense of relatedness. In fact, students talked about a sense of belonging to a community to feel safe in their learning, in having a voice. This is supported by Vygotsky's (1981) claim that learning is a social experience. Therefore the recommendation is to identify critical points where this sense of belonging can be enabled. This would contribute to a more supportive learning environment, where students would have a sense of community, belonging and therefore safety. This highlights the students' need to share a common environment with their peers to also have a relationship with their lecturers in formal and non-formal settings. Interestingly, lecturers also noted the need to have a safe space, especially when recognising the need to admit to students their lack of confidence with using technology. A heightened awareness of the importance of a sense of relatedness to the student experience could have a significant positive impact in the teaching and learning environment.

Conclusion

This research highlights the value of engaging students and lecturers in a shared learning community within tertiary institutions. Bovill, Bully and Morss (2011) highlighted the benefits to lecturers and students of building relationships and connections with one another when collaborative curriculum design occurs. These results further support the need for an environment that fosters an intrinsically motivated climate to ultimately enhance the learning

process. From a competence perspective, it was interesting to see the desire of staff to further develop their digital technology skills, allowing them to use these tools more confidently in the classroom environment.   There was a need to develop a common understanding, especially amongst lecturing staff, about topics like critical and analytical thinking. This would provide the basis of a shared understanding about how to develop those skills. There may be a need to move away from a purely theoretical, lecture-based approach to learning to a more relevant, inquiry-based approach. This could be achieved by introducing students to real-life issues or problems, thus developing critical and inquisitive minds.

Of the three main aspects of SDT, relatedness was the one that emerged most strongly. Connection, having a voice, and the discussion generated in small groups rather than in large lecture theatres were – unsurprisingly –key elements of an engaging and transformative learning experience. Both staff and students shared a preference for inclusion and connection.

This project initiated a dialogue between undergraduate students in the third and final year of their degree with the aim that "their" lecturers would be informed of and reflect on "their" focus group responses. These findings have been relayed to all teaching staff and are being used to inform on-going discussions and teaching and learning strategies.

The findings of this research contributed to the on-going development of an academic support strategy in core/common papers with the support of the student learning centre at this tertiary institution, which will be the topic of a follow-up publication.

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