

Metaphors postgraduates use to depict their student experience: Individual, community and digital presence

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In an Australian national study into student constructions of postgraduate education, 38 students (masters and doctoral) were asked to draw literal or figurative pictures of their experience. Manual thematic analysis of interview transcripts revealed 33 metaphors. Metaphors were coded into individualistic, personal constructions (Me), relational community depictions (Us) and digital or information technology conceptualisations (IT) which were mapped to the Community of Inquiry (CoI) Framework's elements of Cognitive, Social and Teaching Presence. The highest proportion of metaphors were about personal gain and process. The next largest thematic category was relational, mostly depicting what students think others should give, rather than student contribution. Aligned with this theme, students also used metaphors of isolation and perceptions of a missing 'us' factor. There were few metaphors drawn from the language of information technology and/or digital presence, which seems to flag a domain of the postgraduate student experience that requires further development. The key takeaways from this paper are expanded information about digital presence in postgraduate student experience, as well as quality improvement recommendations for universities.

Introduction and context

A picture paints a thousand words. Applied to research, this means that metaphors can be revealing regarding personal conceptualisations of experience, as well as instrumental in improving the quality of these experiences (Lakoff, & Johnson, 1980). In the context of postgraduate education, metaphors can be used to inquire into the visual narratives used by students to conceptualise and evaluate their experiences. Postgraduate student experience describes the totality of students' involvement with, and engagement in, their higher education, and the prioritisation of learning within their broader contextual environment (Crane, et. al., 2016). The *NMC Horizon Report: 2017 Higher Education Edition* identifies themes that capture current and future trends. Key words across these themes include – cultural transformation, real-world skills, collaboration, technology access, personalisation, digital fluency, deep understanding, content co-creation, online, mobile, blended learning, learning ecosystems, incubation, and lifelong learning. It is incumbent upon universities to find creative ways to determine whether these experiential

themes are included and apparent to the students themselves.

In the study described in this paper, metaphors were used as a window into postgraduates' depictions of their student experience through a secondary analysis of data from a larger study. The Australian government competitively commissioned research into student experience, and in 2016, the final report of a nation-wide study into postgraduate student experience was published (Crane, et. al., 2016). The full study posed five research questions:

- How do postgraduates rate their student experience?
- What matters most to them about this experience?
- How do perceptions of experience vary between those in coursework versus research degrees?
- Is there agreement or dissonance between the perceptions of postgraduate students and the staff who support them?



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- How can postgraduate student experience be improved?

The overall goals of the full research project were to determine what Australian postgraduates think about their student experience and to recommend ameliorative actions to guide the strategies of higher education leaders. Engagement with 319 postgraduate students and 47 staff was conducted through student engagement breakfasts, face-to-face focus groups and face-to-face interviews. Students participated from 26 universities and 8 states/territories. Students were enrolled in doctoral and master's programs, and in both research-based and course-based programs.

For the purposes of the secondary analysis, described in this paper, transcripts of the 38 postgraduate students who participated in the face-to-face interviews were analysed. One of the interview questions was:

- *Could you please draw (or describe) a picture of your/the postgraduate student experience (through your university).*

Thirty-three metaphors resulted. This paper reports the thematic classification of these metaphors into individual (Me), community (Us) or digital (IT) conceptualisations to reveal the diversity of postgraduate student experiences. The *Me. Us. IT* framework, posed as the theme of the 2017 ASCILITE Conference, was selected as the thematic categories for the secondary analysis, because a trial analysis revealed a good fit. The metaphors articulated by the postgraduate students were easily sorted into these three categories without forcing the match. Furthermore, this categorisation theoretically aligns with the *Community of Inquiry (CoI) Framework* (Garrison, & Anderson, 2003; Garrison, Anderson, & Archer, 2000; Garrison, & Vaughan, 2008).

Literature review

Postgraduate education, encompassing research higher degree students and coursework students, is becoming an increasingly important part of the higher education sector. From 2005 – 2015 the number of students enrolled in postgraduate level courses in Australia almost tripled to 386,915 (Department of Education and Training, 2016). Together with this increase in numbers, universities acknowledge that student expectations are not static, and as educators reflect on the expectations of an increasingly diverse student population it is important that institutions adapt to contemporary needs, wants and affording technologies to ensure student engagement and learning for a whole-of-university experience (Crane, et. al., 2016). Despite acknowledgement of the increasing numbers and diversity of student expectations, it is widely recognised that research on satisfaction of postgraduate students is limited and that institutions and students

would benefit by greater attention being devoted to this sector (Jancey & Burns, 2013; Morgan, 2014).

The diversity in the postgraduate student population extends across multiple dimensions; gender, age, previous experience, and reasons for study are all major contributors to variations in the postgraduate demographic profile. In the context of this work, it is also important to note that postgraduate students are also likely to rely a great deal on flexible course delivery, preferring online-only distance courses or blended delivery, with scheduled face-to-face *intensive* days supplemented with online components (Garrison, & Vaughan, 2008). Despite further distances and greater reliance on online course components, research has found that in the role of learners, students value integrated student-staff interactions achieving a relationship as *allies in learning* (Richardson & Radloff, 2014). This reinforces findings of an earlier study of both undergraduate and postgraduate students (Hill, Lomas, & MacGregor, 2003) which found that in focus groups probing the general question "What does quality education mean to you" very few students specifically mentioned library resources or IT as important factors, with lecturer quality and engagement with learning being most frequently mentioned.

The importance of blended delivery and personal contact is reinforced by limited studies that have explored students' perceptions of their efficacy in using IT and its role in their studies. In one study of coursework (taught) Master's students in a business course at a British university, students' initial competence in using IT was less than staff expected based on their age and prior experiences (Masterman & Shuyska, 2012). Diversity of experience was also true even in the context of another British course with an IT focus (records management) in which students worked in environments that utilised IT whilst they were studying (McCartan, 2010). These studies in the British context are reinforced by a study in an Australian university in which postgraduate Information Studies students' information literacy skills were not substantially improved in comparison to their undergraduate colleagues (Conway, 2011).

These results regarding digital skills are consistent with previous work on transition to postgraduate study that suggested postgraduate students' self-expressed identity tends towards the novice end of a spectrum of learner experience and contrasts with the tendency of institutions to frame them as more expert learners (Tobbell, O'Donnell, & Zammit, 2010). This research raises the question of how postgraduate students perceive their relationship with use of information technology in their studies/institution and how they might verbalise their views.

It has been postulated that a particularly powerful and pervasive way of expressing abstract thought is via the use of metaphors (Bager-Elsdorf & Greve, 2017; Billott & King, 2015). These authors described analysis of metaphors as a window into the way in which people think about and organise reflections into their experiences as well as their assumptions and values. These studies applied analysis of metaphors to academics' expressions of identity in relation to interactions with leaders and their teaching experiences. The methodology of the current study is ideally situated to extend the power of analysing conversations for requested and spontaneous use of metaphors to understanding postgraduate students' perceptions of the place of Information Technology and digital presence more generally in their broader experiences. This is possible as the study described in this paper deliberately engaged individuals in detailed discussion of abstract interpretations of their experiences and invited them to use metaphors if they so desired. It is intended that this additional perspective on students' stories will add to our institutional understandings of what postgraduate students value and thereby enable us to provide targeted and effective contextualised digital content and supports to facilitate student success.

Research questions and scope

This brief review of the literature on postgraduates' conceptualisations of information technology (and digital culture more broadly) within the context of their overall student experience reveals three apparent gaps:

1. There is a scarcity of research that collects and reports how university is experienced from postgraduate students' points of view;
2. Published research has not included a diverse range of postgraduate student experiences, including masters, doctoral, research-based and course-based; and
3. There is a need for further empirical data to support the improvement of the postgraduate student experience, particularly in the context of digital presence.

In order to contribute to resolving these research gaps, this research was designed such that:

1. Postgraduates were interviewed about their student experience and specifically asked to draw or describe pictures of this experience.
2. A full range of postgraduate students were intentionally included in the research.
3. The empirical findings were applied to derive recommended improvements to university supports of the postgraduate student experience, theorised through the Community of Inquiry (CoI) Framework.

The research questions that guided the secondary analysis reported in this paper were:

1. What metaphors do postgraduate students use to depict their student experience?
2. What is the balance between individual, community and digital conceptualisations?
3. Based on these metaphors, how can the postgraduate student experience be improved?

Methods

Each interview was scheduled for one hour and was completed face-to-face. Participants were identified / recruited through:

- Targeted contact with students facilitated by a member of the research team who was an office holder in the national postgraduate student association;
- Broad-based calls for student participants within the institutions in all eight states / territories; and
- Invitations issued through the team members' networks and professional associations.

Participants were targeted to ensure a diverse range of university experiences including course and research-based postgraduate degrees, on-campus, online and mixed-mode study, and professionally and non-professionally focused courses. Interviews were fully audio-recorded and transcribed, with the transcriptions subsequently analysed by team members and research assistants until concordance of theme identification was reached.

Within the full project and applying the manual narrative methodology approach of Shaddock (2014), each transcript was independently analysed by three full-project team members, inserting interpretive data onto a thematic proforma. Serving as a Research Consultant, one full team member collated, aggregated and validated the three independent analyses. If there was less than 80 per cent agreement, the Project Manager sought subsequent analyses until 80 per cent agreement was reached. SPSS software was used to derive demographic statistics and to analyse comparison of responses between groupings of research participants. The overall methodology for this stage of the project was comparative case study, using the approach of Dowell and Bach (2012) and Yin (2014). The study also fits the classification as design-based research, as the team collected and described naturalistic higher education experiences (Kelly, Lesh, & Baek, 2008).

For the secondary analysis, metaphors identified in the full project analysis were copied and pasted into a collated document. The original interpretive notes from the initial analysis were included alongside the student quotes. Key descriptive words from the direct quotes and

interpretive notes were bolded. For example, in the metaphor about the ‘Lone Ranger,’ this term was bolded within the full quote. Four members from the full research team conducted the secondary analysis and authored this paper. One member collated and assembled the quotes and interpretive notes. Another classified the metaphors into the three categories of individual (Me), community (Us) and digital (IT). The other authors added additional metaphors and checked and confirmed the classification.

Results

Among the 38 interviewed students, 33 metaphors were depicted. Most of the metaphors were offered in response to the specific question probe - *Could you please draw (or describe) a picture of your/the postgraduate student experience (through your university)*. A minority of the interviewees said that they are not ‘visual thinkers’ and others said that they could not think of suitable analogies. Metaphors were also included in this analysis when they occurred in other portions of the transcripts (as opposed to being offered in response to the interview question inserted above). Multiple demographic features of the interviewed students were considered, such as gender, research-based versus course-based and state or territory of study. Of the 261 students participating in the larger study, including both the interviewees described in this paper and those participating in engagement breakfasts described in other papers, the average student age was 35 years, the modal age was 24 years and the age range was 21 to 60. Sixty nine per cent of these students were female and 30.5 per cent were male (one did not disclose gender). The most common discipline of participating students was humanities (17 per cent), followed by business (11 per cent), and general sciences (10 per cent); however, almost half of the students did not explicitly disclose their discipline (45 per cent). Over half the sample identified as being full-time students (59 per cent). In terms of degrees, 52 per cent were enrolled in a doctoral program and 38 per cent in a master’s program. Fifty-six per cent identified as being enrolled in research-based programs, 27 per cent in course-based programs and 7 per cent in mixed modes (elements of both course and research). An additional 9 per cent identified their programs as “other,” while 1 per cent did not disclose their program. Among the 38 interviewed students, the only demographic groupings that appeared to cluster in the metaphor analysis were whether the students were enrolled in a masters or PhD. The relatively small sample size of 38 students means these groupings should only provoke further inquiry as opposed to being indicative or conclusive. Metaphors clustered into the demographic and thematic groupings are indicated in Table 1 below.

Table 1: Classification of postgraduate metaphors of their student experience

	Me	Us	Lack of Us	IT	Total
Masters	7	3	2	2	14
PhD Domestic	7	7	3	2	19
Total	14	10	5	4	33

The highest proportion of metaphors depicted an individualistic, personal construction of the higher education experience. Metaphors in this cluster were evenly divided between masters and doctoral students. Details of the student and educator perceptions of the postgraduate student experience will be reported in full elsewhere (Hamlin et. al., in preparation); a summary of the metaphors is provided here to contextualise the place of information technology in student responses. Five of these ‘Me’ metaphors were of adventurers and/or athletes physically striving to accomplish goals. These images were of a hurdler, a jungle walker, a mountain climber among ‘lots of peaks,’ a hoop-jumper and the hero of a ‘choose your own adventure’ book. Three were organic images, connoting movement and change. Of these, one was of a restaurant’s ‘blooming onion’ which opens up to reveal the layers and another of a ‘blooming flower’ about which, the student said, ‘I have had a lot of personal growth out of this, so I am thinking of a flower that is growing and trying to open up.’ Another organic image was of a river which ‘ebbs and flows.’ Two other metaphors were mechanical, both with active moving parts. One was of motor vehicle gears, the student said, ‘initially my PhD was in first gear, nice and cruisy ... and then the PhD ramped-up and accelerated very quickly and I found it difficult to keep up.’ The other mechanical image was as a rollercoaster ride in that, ‘you are panicking, then you have fun as you have never had before.’ Two of the metaphors were of add-ons, one described like a vitamin supplement and the other like a ‘chain around my neck dragging me down.’ On a closely related theme, the final metaphor was of ‘balance’ and in this case, where ‘studies are a lower priority’ than other pursuits. Of the fourteen metaphors that focused on personal pursuit and objectives, half were primarily positive, two mostly negative and the others mixed and largely subscribing to the metaphoric philosophy of ‘no pain, no gain.’

The next highest thematic category of metaphors was relational, or in other words, emphasised the ‘Us’ in postgraduate studies. Seven of these metaphors were expressed by PhD students and three by masters students. Six of these ten metaphors aligned with the

'Me' category described previously. One of the metaphors was of 'journey' but this time, the student included fellow travellers in the image. 'I think the experience is the whole journey from the start to the end. The support that you get through the experience.' Four of these metaphors mentioned 'balance' with an emphasis on balancing time spent on studies and time spent with others outside of their education communities, most commonly referencing family. These four metaphors were of a juggler, too many hats, a seesaw and a black-and-white mime-mask, 'balancing two faces in your life.' Finally, one student described 'cross-pollination' experiences of universities and departmental staff working together to support students. While these first eight metaphors were about relational advantages to the student (one-way), two others depicted postgraduate studies as opportunities to contribute to others. One student used a banking-metaphor, describing regular reflection into questions about increasing cultural capital for all. The other metaphor in this theme was of 'art galleries' in that 'universities should collaborate and display research rather than owning the research and hiding it from others.'

Five other metaphors were also relational, but this time, clearly showing the antithesis of community, or in other words, depicting NOT-US and thereby negative sentiment. These were largely about a sense of isolation in their studies with examples being, 'draw a circle about 500m around your classroom' and use of the words 'isolated' and 'lonely.' On a similar theme, another student depicted the experience as a Lone Ranger, which was further described as 'not always an enjoyable experience.' Other themes were a gap in supports depicted as a tennis match, where they 'throw the problem to someone else – back-and-forth' and a social ranking or a caste culture of universities - 'We are second class citizens. At the federal level, the Department of Education treats us sometimes as students and will leave us out of conversations where we should be treated as a stakeholder – an equal stakeholder.'

Of interest was the paucity of direct references to the digital domain within these student depictions of their experience. Only two students made direct and explicit use of digital concepts in their descriptions - one using the metaphor of a 'firewall' to depict an impenetrable barrier between coursework and research studies. Another used Apple to describe the perceived ranking of institutions and graduates. 'The Apple difference – Apple does not have cheap products, but people still buy them.'

Of particular interest is that students seldom used digital terminology, nor did they directly associate their depictions with information technology. However, assumptions of digital pervasiveness seemed to be germane, evident either through descriptions of

perceived gaps in digital support or failure to recognise that digital resources might be part of the resources they could use. In one example of this, an online masters student obliquely used metaphors of connectivity and discussed her desire for more interaction with other students via online systems provided by the university. 'So that's the online space and ... students are...just writing their discussions and completing their assignments but they are not really connected to me, they kind of interact with the lecture but it is not..., really about socializing'. She further expressed that this would ideally be separate to fora moderated by the lecturer 'so if we want to talk about something private we shouldn't be there so if you want to talk about a lecturer or something you shouldn't be in the same space.' Another student undertaking a research degree mentioned various layers of support provided by his university including library supports for academic writing and reading, but did not emphasise information technology even when prompted by the interviewer. Thus, in response to a probe enquiring whether university facilities might include digital resources including computer labs, the student responded 'computer labs, yeah, including like sporting facilities.'

Discussion

The 38 postgraduate students interviewed for this study represent a cross-section of the diversity in Australian postgraduate studies today – male, female; international or domestic; research or coursework oriented; part-time or full-time; vocationally or non-vocationally inspired; studying in online, face-to-face, or mixed mode. However, due to the relatively small number of research participants and non-random sampling, results should not be interpreted as representative. What can be ascertained is that across these various demographics, students expressed a rich view of their experiences encompassing the totality of their studies and lives. This analysis has particularly focussed on the ways in which postgraduate students used metaphors to describe how information technology contributes to their experience.

In keeping with earlier studies of metaphors (Billot & King, 2015), searching for and analysing the metaphors used by (and in some cases, not used by) students enables exploration of ways in which they might be expressing assumptions, values and opinions that may or may not have reached their conscious awareness. The use of metaphor analysis to probe a concept like information technology within a broad student experience is consistent with the idea that metaphors provide valuable insights to abstract phenomena by probing our understanding (Wegner & Nückles, 2015). Similar to other recent research using metaphors (Bager-Elsborg & Greve, 2017) whilst the use of some metaphors was consistent across interviewees (e.g. concepts of Me and Us) others represented a distinct and individual view of their

experience (e.g. use of the term “firewall” as an expression of the differences between coursework and research studies). As with the work of Bager-Elsborg & Greve (2017), the current study was not designed to study the use of metaphors *per se* but rather explored their spontaneous use *by* participants. Further work to elaborate on the metaphors and/or posing these metaphors to additional participants might shed further light on the stability of the metaphors used by this relatively small sample. This study of student experience through metaphorical analysis would complement the call by Bager-Elsborg & Greve (2017) for a full exploration as an efficacious education research methodology.

Although limited in number, the references to information technology and digital presence by postgraduate students in this study are revealing in their scope. Some students used some metaphors of digital concepts to refer to other themes and referred to their experiences of information technology using metaphors – and did not reference information technology when it seemed to the authors that it was relevant. These instances where digital presence was apparently absent from postgraduate student metaphors/conceptualisation warrants further reflection on whether there are perceived benefits of digital tools and presence and whether they are as important to postgraduate students as they are believed to be by educators and researchers. Was it that many of the participating postgraduate students took digital presence and tools for granted and/or that they did not consider these factors as terribly important to their studies? It seems that some students not only think about information technology *for* their learning but also sometimes think *about* their learning using information technology concepts. With this in mind, it is interesting to consider how these depictions intersect with depictions of information technology put forward by leaders in higher education framed as the themes of the last three ASCILITE conferences (see ASCILITE, 2014). The theme for 2017 of - *Me. Us. IT.* - clearly resonates with the multiple metaphors used by students to describe their connections (and lack of connections) during their studies and the potential of IT to create virtual spaces for these connections. This is also true of the 2015 theme of - *Globally connected, digitally enabled* – signal[ling] a focus on reaching out to the world and bringing the world to our students’ and the 2016 theme - *Show Me the Learning* - designed to focus attention on the demonstration of learning aided by the adoption of technology in the education space.

The potential of information technology to support student learning, teaching and connectedness has long been explored and discussed. One way in which this has been elaborated has been through evolution of the *Community of Inquiry (CoI) Framework* to ‘define, describe and measure elements supporting the

development of online learning communities’ (Garrison, Anderson, & Archer, 2000; Swan & Ice, 2010). The CoI model seeks to define three elements of an online/blended mode of students’ experiences as *social presence*, *cognitive presence* and *teaching presence*. All three elements of this framework link to the metaphors used by postgraduate students in this study irrespective of whether they were online students or engaged in on campus studies: social presence – through the desire for connectedness; cognitive presence – through the emphasis on the importance of their learning; and teaching presence – through expressions of need for academic support. The *Community of Inquiry Framework* is presented, with the permission of the authors, as Figure 1.

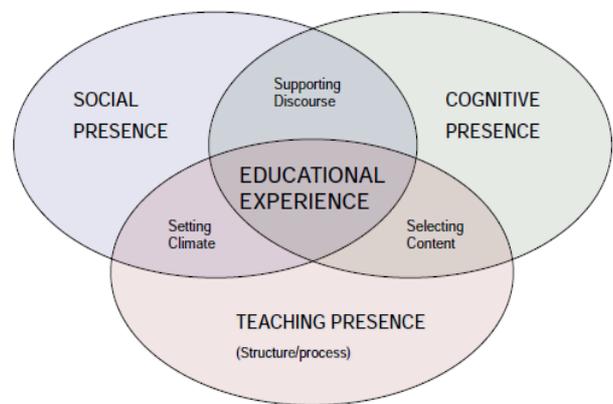


Figure 1. The Community of Inquiry (CoI) Framework (Garrison, Anderson, & Archer, 2000)

Cognitive presence

Analysis of the metaphors used by the interviewed postgraduates indicated that overall, the students appear to have a defined sense of their own personal motivations and objectives for the experience. Their use of metaphors that connote change seem to indicate their shared conception of the postgraduate student experience as cognitive growth and development. They also recognised that this change process is seldom smooth, linear or easy, using metaphors connoting complexity and ‘messiness’ such as a jungle and a mountain with many peaks. Notably, there was little talk of cognitive presence in the digital sphere. Students offered-up few metaphors that suggested reflection and growth regarding place and development in their digital lives.

Social presence

Postgraduate students who participated in this study frequently situated themselves in the context of others. These others were most frequently those who were not ‘inside’ the university student experience boundaries, such as research supervisors and teaching staff might be – more often referring to family and friends from outside university. Metaphors were frequently about balance

between student and non-student roles and identities. There appeared to be little consideration of the overlap and interactivity between these selves. The digital metaphor used by a student in the social context was of a 'firewall' separating these two realms. Furthermore, students used metaphors to communicate despair about a lack of social presence within and among their student experience. Notably, metaphors depicting social presence did not address the role of digital communication and other productivity tools or learning management systems as moderators and/or bridges, joining, unifying and integrating life experiences and multiple selves.

Teaching presence

Given the digital focus of the analysis discussed in this paper, the CoI concept of teaching presence has been applied specifically to digital teaching presence. This means that analysts used this digital lens to examine the data for responses to two specific questions: 1) Did metaphors reference the online presence of teachers, and 2) Did metaphors depict teachers in the postgraduate domain as providing leadership in digital conception and content. The overall response to both of these questions was negative. Within the metaphors used by the students in this research, there was a notable non-digital picture of educators, with respect to how and what they taught.

Recommendations for quality improvement

One of the rich applied values of the CoI framework is the explicit identification of pedagogical actions situated at the intersection of the three types of presence. These actions are particularly applicable in cases such as the one depicted in this research, whereby the students' metaphors have revealed room for heightened presence in all three realms. This next section therefore recommends three actions applied from the CoI framework.

1. Supporting discourse – It is recommended that universities increase the use and explicit discussion about communication tools and approaches that engage students in scholarly digital communities and critical conversations, particularly about digital identities and leadership. For example, postgraduate students might be guided to discuss future technologies in the context of their career contributions to social change. Discussion questions might include: what technologies are you currently using that enable/enhance your discipline/industry; how might these technologies change/evolve; and what is your role in leading change including through application of digital solutions.
2. Setting climate – It is recommended that educators explicitly articulate expectations and model robust practice in digital engagement to heighten and

expand social presence within the postgraduate educational experience and carries over beyond graduation, so that alumni are nurtured as leaders of social presence, including in the digital realm. Specifically, postgraduate students might be encouraged to consider not only mainstream digital tools that are currently being used in education and/or industry, but also future and emerging tools that have the potential to solve communication problems and social isolation of key groups, in particular. Discussion questions might include: what are prevalent and/or pressing problems or challenges for particular groups of people; what current tools of digital engagement might be used to ameliorate these problems; and what future solutions are needed.

3. Selecting content – It is recommended that educators design curriculum, research opportunities and/or assessment that fosters scholarly reflection, critique and application of digital presence. Educators are encouraged to ask themselves: what digital knowledge, skills and attributes should be embedded in curriculum to prepare postgraduate students as leaders in their discipline/industry; what current research about digital presence might be incorporated into and/or lead my teaching/research supervision; what research questions in the context of digital presence should I raise with my students; and what skills can postgraduates develop through their assessment activities and/or demonstrate in their portfolios.

Conclusion

Overall, there appears to be congruence between students' metaphors and the thoughts and intentions of educators regarding the potential for information technology to support learning and the broader student experience. However, the observation that information technology, although pervasive in their lives, did not feature more strongly in students' spontaneous depictions of their student experience supports the view of Jones, Heffernan and Albion (2005) that higher education has not yet succeeded in productively integrating technology, learning and teaching.

This study posed three research questions.

The research questions that guided the secondary analysis reported in this paper were:

1. What metaphors do postgraduate students use to depict their student experience?
2. What is the balance between individual, community and digital conceptualisations?

- Based on these metaphors, how can the postgraduate student experience be improved?

In summary, results indicated that students use a diversity of metaphors to depict their experiences and most of these metaphors show movement, action and change. The balance is weighted towards individual (Me) metaphors that emphasise personal gain, and then community (Us) metaphors, some of which are about social presence and others that show feelings of isolation, and finally, a few of which are contextualised in information technology and digital presence. Three recommendations are made to universities to improve quality of the postgraduate experience: supporting discourse, setting climate and selecting content, all in the context of digital realms.

The main strength of this research was that the use of metaphor served as a creative means of hearing about the student experience from the postgraduate point of view. This research demonstrated the effectiveness of this methodological approach, which warrants further investigation in its own right. The main limitation of this research was the relatively small sample size, such that comparisons across demographic groupings (e.g. domestic versus international students) could not be made.

From this study, three questions for further research emerged.

- Do universities understand what postgraduate students know about the information technology resources available to them?
- Do universities know how postgraduate students would like to use information technology – for (a) their learning and (b) to facilitate connectedness?
- Do universities understand how their educators are currently using, and wish to use, information technology to support students?

Empirical responses to these three questions will help universities answer a fourth question:

- Are universities deploying information technology resources in ways that maximise their impact for postgraduate student learning and engagement?

Answers to this question are critical to ensure that universities serve their postgraduate student population with strategies that target limited resources to areas of greatest impact for students and in so doing move towards realising the so-far under-utilised potential of information technology in enhancing the student experience.

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