Vol 5 | Issue 1 (2017) | pp. 39-47

JOURNAL OF
Perspectives in Applied Academic Practice

www.jpaap.napier.ac.uk

Let Freedom Reign: A Case Study Exploring the Extent to which H.E. Students Choose 'New' Forms of Pedagogy and Technology in a Student-led Project

Peter Shukie, University Centre at Blackburn College, UK

ABSTRACT

This case study explores what happens when a cohort of second year undergraduates on a BA in Education Studies are given open access to create a learning object using any technology, and any pedagogical approach they choose. The focus of the project is on establishing the extent to which technology leads to transformative approaches to pedagogy. A Taoist perspective demonstrates the tension of a 'yin' approach to collaborative learning with yang reflecting teacher-led instruction. Back Channel learning highlights behind the scenes use of technology that suggests study practices have altered despite, not because of, institutional influence.

Keywords: Yin/Yang, technology-enhanced learning, project-based learning, student-led.

Introduction

> *When I hear, I forget*
> *When I see, I remember*
> *When I do, I understand (The Tao of Teaching,* Nagel, G., 1994, p. 13*)*

This study explores the way that technology is affecting the ways that students respond to an assignment that directs them to create technology-inspired projects as part of a degree programme. I was interested in whether the much heralded rise in technology leads to different conceptions in how students learn and study. The key question might be summarised as to what extent the digital age necessitates a move away from teacher-led to student-led education.

Notions of a shift from a teaching paradigm to a learning paradigm have been prominent for decades (Barr & Tagg, 1995). Technology sharpens the argument with some suggesting technological innovation heightens the need for teachers (Laurillard, 2008; 2012) while others suggest web-based technologies offer space to escape traditional conventions of teacher-led education (Facer, 2011; Siemens, 2005).

Taoism, specifically the concepts of *yin* and *yang*, provides a metaphor that highlights the dichotomy of institutional control and student-led delivery in Higher Education (H.E.). This research contends that practice needs to be the key to change, rather than theoretical discourse and institutional influence alone.

Beginning with a question over what students actually use, the research seeks evidence around whether the digital age is witnessing a revolution in what students perceive as meaningful pedagogy. While it is accepted that technology can offer a route to change, the extent to which this alters fundamental relationships between teacher-student is less clear. Students are asked to make choices around what projects they create with analysis focusing on how these projects respond to lecturer-student roles. A key interest is in how lecturer/teacher roles remain sites of control or whether projects reflect changing pedagogical practices that prioritise peer-to-peer approaches.

The research is based on an undergraduate module on an Education Studies programme which has been designed to enhance student-choice. The Taoist principles of *Yin Yang* are used to highlight two distinct, but interwoven, elements in higher education that characterise the implementation of technology-enhanced learning. In essence, this appears as a tension between the emergence of social constructivist, student-led principles of learning and similarly technology-based, but institutionally controlled and teacher-led approaches.

In designing the module, the aim was to empower students to take control of the learning experience and bring their own experiences to the fore in designing what each project was and how it would be assessed. Two central questions framed the research here:

1. In what ways did the choices of technology that students made support ideas of 'leading out' or 'telling' as means of communication and learning?
2. Did students demonstrate preferences for particular pedagogies that supported or challenged institution-led or student-led practices?

Two Yin/Yang and philosophies-in-practice

Taoist concepts of *Yin Yang* define two opposite but coexistent tensions that interact to form a whole. *Yin* encompasses a pedagogy based on 'leading out' (Nagel, 1994, p. 2) and is based on 'sensuousness, intuition and subtlety' (p. 2); Yang is based on a pedagogy of 'telling' and is 'absolute, rational and aggressive' (p. 2).

Here, 'leading out' relates to the students being encouraged to explore their own experiences and contexts in developing a project, as opposed to being told, or instructed, what they need to do. It also provides a lens to examine the extent to which students apply this approach in their own projects. 'Telling' or instruction-based models still dominate much education and whether technology encourages challenges to this is a key part of the research.

For Mayes & deFreitas (Beetham & Sharpe, 2007) this conflict between pedagogical manumission and institutional control, or 'dimension of locus of control' (Beetham & Sharpe, 2007, p. 21) presents aspects of a Taoist dualism. Peer-to-peer learning (the yin) 'empowers learners…where they make their own design decisions' which is opposed by the VLE (the yang) which aspires to, 'standardisation…at the institution-in-control end of the dimension' (p. 21). A similar dichotomy characterised the Transforming and Enhancing the Student Experience through Pedagogy (Mayes et al, 2009) research that located, '…a kind of power struggle between a learner-centred pedagogy agenda…and a more traditional subject based curriculum delivery approach' (Mayes et al., 2009, p. 217).

In seeking how technology leads to authentic transformative practice the discourse becomes one that is not about technology at all. Instead, technology becomes a vehicle for the continuation of historical divisions in how we best learn, and what roles the teacher-student should take. The tension between yin yang seems to reflect technology presenting no pedagogical transformation but an updating, a relocation of the 'universal question of bondage and liberation' (Goicoechea, 2003, p. 83).

The division between yin yang approaches is often clouded by a proclamation for 'leading out' that is actually based in practices of 'telling'. The UK Government research project, Transforming and Enhancing the Student Experience through Pedagogy (Mayes et al., 2009) highlighted a 'modern pedagogical consensus for socio-constructivist thinking' (p.209). Biggs (1996) found a similar claim a decade earlier but argued that the, 'dominant theory-in-use' (Biggs, 1996, p. 348) was one of transmission, repetition and memorising of information. Lecturing and 'telling' pedagogical approaches still dominated despite the discourse suggesting a preference for social constructivism and shifting ownership from teachers to learners.

Barr & Tagg (1995, p. 15) argued that while most educators had espoused theories of student-led pedagogy they ultimately relied on the yang of telling and instruction. The binary was one of 'espoused theories' and 'theories-in-use' (ibid) with little attention paid to how easily changes in approach might be accommodated by students indoctrinated in dominant conventions of telling and instruction. In response, Kanuka (2008) calls for educators to realise their 'philosophies-in practice' with technology choices being based in wider appreciation of what education is meant to achieve. Parchoma (2011) promotes a stronger line suggesting educators need to resist a slide into an 'e-learning singularity paradigm' (p. 63) in which technology-inspired pedagogies, 'converge into a limited set of identifiable, manageable best practices' (p. 64).

This research explores the extent to which students' philosophies-in-practice might be undergoing a transformation or whether the residual theories-in-use still dominate the pedagogical imagination of students. Yin yang suggest both approaches co-exist, the tension between them reflective of ongoing shifts in practice. As such, the students' projects provide a practical realisation of often intangible claims of radical change occurring in how learning is perceived.

Methodology

The case study discussed here is a module from a Level 5 (year two) module on a BA (Hons) Education Studies programme with emphasis is on a single assignment for the module. The assignment title was 'Create a learning object that uses technology to enhance and explore the ways that learning and teaching may occur'.

The cohort consisted of 19 students aged between 19 and 33 with 17 female and 2 male students. The course runs through a College-based Higher Education programme, taught in a Further Education college. The module ran through 3 hours of weekly lectures/ workshops over a 16-week semester.

A blog was introduced to disseminate the projects and to encourage students to share their work and comment on each other's materials, offering a useful pre-cursor for a peer assessment approach to the project. I created an evaluative framework that sought to promote depth of interaction with technology and to consider alternatives that included questioning the value of the VLE as a central platform for the module.

The **Evaluative Framework** consisted of five areas that students used to reflect on the design, use and evaluation of their projects. These were:

Technology – looking at their choice of technologies, and the implications for production and consumption.

Curriculum – details of what they hope to teach, not necessarily from any formal curriculum, but more widely as the path of learning envisaged.

Pedagogy – the choices students made in terms of learning theory that might also reflect differing learning and teaching perspectives, formal and informal.

Assessment – linked to pedagogy, the ways in which students anticipated assessment (self, tutor, peer) would help indicate the processes involved in designing the projects.

Environment – involving a broad appreciation of the places where learning and teaching would take place, and the impact this would have on the learning experience.

The evaluative framework is significant in helping direct the students to a use of technology that began by questioning pedagogy and assessment as well as technology. Students were encouraged to begin with questions of what role the teacher and student would have and how knowledge would be viewed. This framework is significant in emphasising a wider approach to technology beyond skills and competency. Students are encouraged to consider how and where the projects will be used and what pedagogical and theoretical approaches were employed.

Sampling

The participants in the module were actively involved in both the module and the research into it. The data collection process took place in workshop sessions that were a part of the lecture/workshop approach to running the module. Involving students in the research was commensurate with other modules on the Education Studies programme with the smaller cohort of college-based Higher Education allowing a continual interaction between staff and students. The cohort is predominantly female, which is common to Education Studies cohorts nationally (HESA, 2016). Although gender is not central to this research it is a valuable area for further study with the emphasis on technology in education.

Ethical concerns

This research was introduced as a part of the re-design of the course for validation with a partner university and student feedback is integral to this process. It is understood that student responses may reflect their concern with also being assessed for these projects. To alleviate this, the exchange in interviews/data collection were part of the intended dialogue forming the sessions and no additional expectations were made of students in order to collect data explicitly for research. Students were invited to take part and had to make an explicit acceptance with all students giving consent.

The proposals were a formal assessment and used to inform the research. The students had to share their proposals in the module VLE and blog to gain feedback from peers and lecturer. This dialogic approach was a feature of the research but also an integral part of the module pedagogy.

Data Collection

Data collection operates at two distinct levels. These levels are grounded in the concepts of *latent* and *manifest* content (Garrison & Anderson, 2003, p. 140). *Latent content* is less overt but significant hidden routes that lay behind the choices made and the form that the projects and comments took. Latent content is evident as '...not overt products, but as covert processes' (p. 140) and in the project relates to the learning activities students engaged in behind the actual products generated. This approach digs deeper to reveal the processes behind choices made and avoids falling into traps of common sense assumptions that equate technology choice with pedagogical influence.

Manifest data is that which 'reside on the surface [and are] easily observable' (ibid) and includes here the technological choices made (websites, PowerPoints, blogs) and forms of material created (videos, documents). Manifest content typifies approaches to online learning based on quantitative measures and explicit evidence of what technologies are employed.

In terms of yin yang, it is possible to see where technologies suggesting a 'telling' approach (such as PowerPoint) might have been used to generate a 'leading out' response. Alternatively, technologies that suggest distributed learning through manifest data collection (such as websites) are rooted in teacher-led instruction when considered alongside the latent processes and rationale of the creator.

The types of data collected to represent each type of content are:

Manifest

Learning projects: The projects themselves were evidence for what students created, the types of technology selected and what these were used to teach, and to who. This approach also allowed analysis of technology within projects and an opportunity to view how video, images, text and other material were applied.

Online discussion: Interaction between students and myself as researcher took place in face-to-face and online spaces. A social media page supplemented our sessions and I invited students to make comments on their work as they progressed. This provided a communal space for reflection and discussion based on the module.

Face-to-face discussion: Discussion took place in workshop sessions and occurred in various situations including one-to-one and in groups. These were not recorded and relied on researcher notes. Often these discussions led to the formation of questions that were then posted on the group social media page and that allowed for additional responses.

Latent

Project proposals: The initial project proposals provided clear outlines for the approaches students had chosen. These were written documents that provided an ungraded submission which were discussed with students with the aim of establishing projects clearly at the design stage. The evaluative framework provided opportunity to see difference between student approaches to technology, pedagogy and assessment that related to the yin/yang of teacher/student roles.

Interviews: All students were involved in a feedback discussion after the proposal had been read and these discussions helped to expand on choices made. This was a naturally occurring part of the module that applied to all students and where these are included in the research the student gave consent.

Data Analysis

The themes emerging from data reflected the manifest and latent content from data collection. Manifest content was tangible and allowed for the creation of visual representations of the types of technology that students selected (see table 1). This data analysis stemmed from counting instances of each technology across the participant cohort. A deeper level of analysis was necessary to align this manifest data with the intended use of each technology. The latent content, coming through student description in the proposals and interview, helped to create the alignment of technology with pedagogical approach (see Figure 1). Such an approach distinguished technology choice from pedagogical intention and avoided making assumptive statements about pedagogy based on what technology was selected. As such, websites are represented (in Figure 1) as both spaces for institution-in-control (yang) and peer-to-peer (yin) approaches. Analysing data across both type and rationale means that the findings are reflective of the students' experiences based on technology used but also on how they envisioned this use in practice. The evaluative framework provided a clear articulation of student thoughts and decisions in the design process as represented in their proposals.

Findings and discussion

The influence of a yin yang dichotomous approach is visible in the range of technologies that attempted to utilise Web 2.0 and student generated content that remained largely configured around the institutional VLE page. Table 1 illustrates a tendency toward 'new' technologies in the form of websites and video that might suggest a transition from more traditional presentation media, such as PowerPoint chosen by three students.

Technology Choices	Number of Students (n=19)
Website	8
Blog	1
VLE	0
PowerPoint	3
eBook	2
Video/ YouTube	4
Video/DVD	1

Table 1 Table showing student choices of technology for projects

The Virtual Learning Environment (VLE) was selected by none of the students which was a surprise given the emphasis on this platform across the institution and within the Education Studies course. Table 1 appears to suggest technology-choice based on leading out and peer-to-peer learning over teacher-led instruction.

However, once latent data is included the picture changes significantly. Rather than a pattern of learning as student-led the analysis of the student evaluations, rationales and interviews leads toward a generally teacher-led emphasis in the projects. Examples of websites, which might be viewed as distributing learning and transferring responsibility across student-teacher space, often become little more than elaborate replacements for PowerPoint presentation tools. The choice of a website often required a teacher, designed to be applied within a formal classroom learning context. Websites in some cases provided opportunity to distribute learning outside

formal, conventional space. Figure 1 defines the data with both manifest and latent discussion applied, with technology-choices still evident but also reflecting pedagogical choices of teacher-led or student-led.

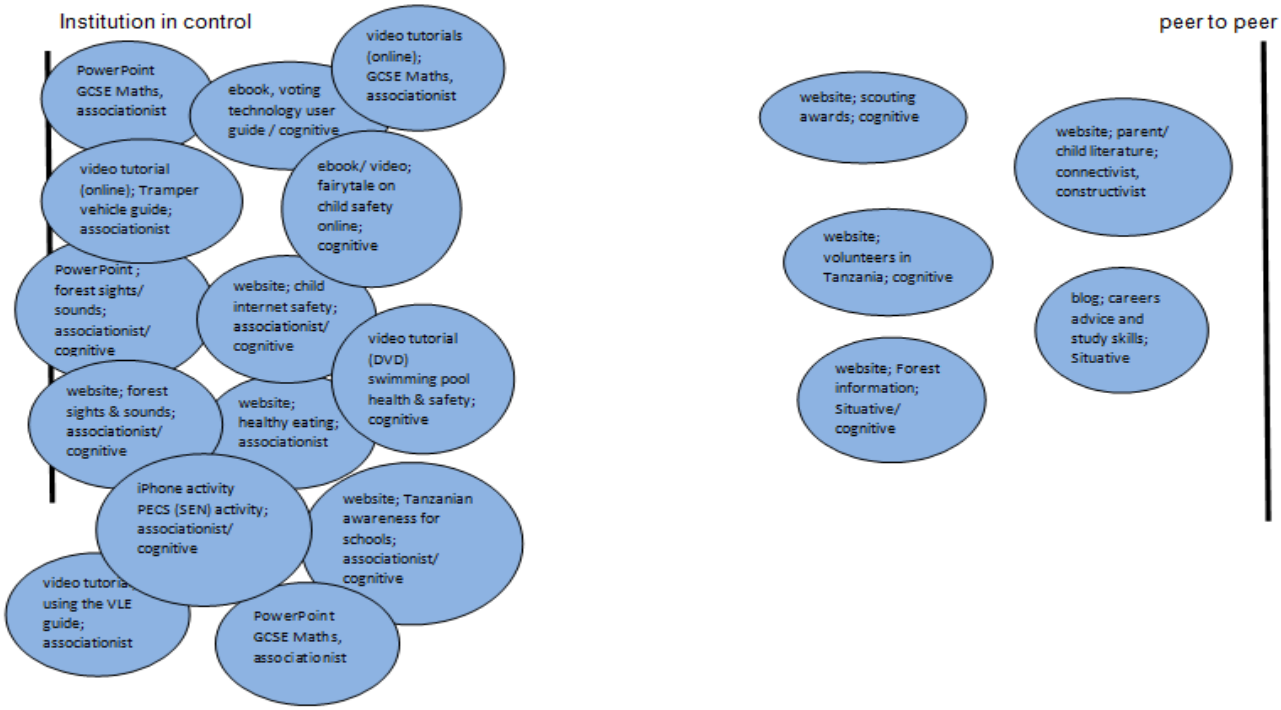

Figure 1 Illustrates of the range of technologies on a spectrum based on Mayes and DeFreitas' (2007) dimensions of locus of control.

From analysis of the latent and manifest data the idea that technology leads automatically to increasingly student-led approaches is not supported by evidence. Discussion within technological choices highlights a residual concern with teacher-in-control models. Despite continued exposure to literature and examples of networked learning and explicit reference to the transformational potential of technology the pattern within most discussions was traditional in concept.

Three themes are presented (1-3 below) that reveal some detail around the rationales for technology choice. The discussion indicates that students are involved in complex responses to individual contexts and use technology accordingly. Notions of any technology-type being inherently transformative or traditional are questioned by the student feedback which highlights individualised responses to specific situations.

1. Video tutorials & PowerPoint presentations

The first theme of video and PowerPoint highlights alignment with notions of a knowing teacher, a defined concept of knowledge and a basis in transmission models.

Video tutorials and PowerPoint presentations were the primary choice for students that considered they had little interest in the use of technology. None of the students creating video tutorials had social network accounts before the project, and their feedback on technology in education was mainly on its uses being 'probably significant in the future' (male, 19), with a concern that, 'I'd prefer books really because I know what to do with them, it is clearer, but I know technology will be more and more useful, especially for the younger generations' (student, female, 20).

In essence, the introduction of technology here was based on the ways in which the students' target audience could access pre-defined information. None of these projects used forums or feedback/collaboration opportunities. Despite discussion in the proposals regarding the potential for social media, the video tutorials were presented in 'stand-alone' formats and designed for classroom use, or in the case of the Tramper vehicle user guide, attached to a charity website.

In creating the Tramper video, a 'right way of doing it' was key and 'using the video was the best route, because even when the technology was being mastered, it is useful to know what each of the stages of learning needed would be' (student, male, 19). The choice of the topic was something again directed by a clarity related to the pedagogy involved, 'I looked to make a clear guide, clear instructions that anyone could follow, without any need for discussion'.

Overall, the focus of the students creating video tutorials could be characterised by a limited inclusion of pedagogy beyond the associationist, behaviourist (Beetham & Sharpe, 2007, p. 21) approach. It would be tempting to consider that the students here are in some way less focused on the uses of technology in their own lives, so less able to see potential uses for their own and prospective students learning in the future. Yet choices were made based on very real concerns, notably to do with access in their own

communities. The health and safety in swimming pools tutorial was the only example of video distributed via DVD. This was based exclusively on the student's recognition of the restraints she found with her client group:

> *I asked the children's parents if they would look at these [tutorials] if I put them on a website, or on a YouTube channel, but they did not all have internet at home so I decided to make the material available on DVDs. It costs a bit more, but the parents all had something they could play discs on, but most could not get easy access to the internet.*
> Student, female, 22

In selecting their philosophies and pedagogical theories there was a defined sense of community awareness and targeting for a user-group that shaped decisions. While there is little 'leading out' here, the 'telling' approach is not one of purely teacher-led authority and often a practical response based on awareness of the purpose of the learning planned.

2. Websites

This theme highlighted the greatest spread across the locus of control. At the peer-to-peer end of the spectrum one project was built around a student's interest in connectivism. This was a website for people to share children's literature with an intended outcome of creating a community of children, parents and teachers in a non-hierarchical shared space. The inclusion of teachers may suggest a teacher-led space, but in discussion the students described how:

> *Teachers could join in and make some suggestions about what books they use, and also add developed ideas about the way children are taught now, the differences from when we learned literature… It's not telling, or teaching, it's for additional information and another way of looking at things.*
> Student, female, 27

It was an approach that suggested a willingness to engage in flattened hierarchies but one that revealed some tension once this became 'live'. The response was positive from the users, but, 'the teachers expressed some concerns that it was something they should do, not the children or the parents…I felt they wanted more control, but that is not the point of the website, it is meant to open up learning to all'.

Other websites at this end of the spectrum had clear subject focus and created peer-to-peer opportunity by providing collaboration spaces through forums and social media links. The website content was primarily designed by the student with feedback being anticipated as users responded to this material.

Four of the eight websites created represent *institution-in-control* perspectives. The focus was on in-class delivery, had prominent teacher presence, with intended use in line with pre-determined curricula. The selection of technology was not based on practical advantages beyond that of hopefully engaging children with new technology that, 'using websites makes the kids like it more, and gives the teacher chance to use modern resources, not just books' (student, female, 22). It may be significant that the choices at this end of the spectrum were aimed at school-age children and although this led to inclusion of a newer technology, it did not involve distributed knowledge in the pedagogy.

3. Back channel learning

When looking at the production of materials and the perception of how these represent exploration of technology it was clear that the actual product was not necessarily the most useful point of analysis. *Back channel* originally described the ways in which people offered affirmation and challenge within spoken conversational exchange (Yngve, 1970) but has more recently become the practice of using social media/computer mediated approaches to comment on a central discourse, '…the new conversations that audiences create during a presentation' (Atkinson, 2009, p. x). Here, *back channel learning* is the descriptive term for learning that goes on behind the central project. It is, in essence, the learning that learners undertake independently, through social networking sites and an informal learning community for development of skills.

This was most notable where students selected ambitious projects and considered they could learn new skills online, through YouTube tutorials, blogs and online, free to access help guides. Where students had chosen to create a website for the first time, the sense of being able to access a range of support and knowledge, and free to use website building functions, was significant in helping them feel confident in pursuing projects requiring 'not yet known' skills.

The amount of time students spent on the projects became significantly longer than in other commensurate modules as they accessed learning outside the formal, course-based material. A website for children using internet safety provides an example of the range of back channel learning employed:

> *The website took a long time, but the more I did, the more I wanted to use. I started with images, but then needed to know how to embed videos, that meant having to edit the videos to get the right length, how to change into an MP4. I didn't know any of that stuff, but all of it was linked with each other to make the website how I wanted it to be.*
> Student, female, 20

The volume of work indicated a commitment to utilising technology with six of the eight websites creators saying they had spent over 50 hours on these projects. This time was not spent in formal learning spaces, but through social media and online collaboration.

The less skills students considered they had in technology, the less time they reported they had spent on the project. It may be that the opposite would have been expected if new skills were required. It was clear the majority of the learning/research/development was informal, independent and online and much of this was only vaguely represented in the actual projects created. Significant collaboration, skill development and research might be reflected in a short video embedded in a website that in itself offered only limited evidence of the work behind its creation.

Back channel learning highlighted a definite relocation of learning from the institution to other, outside spaces. What is less clear is the extent to which this exposure to outside learning is able to reflect critical analysis in non-technology focused projects. The outside learning evidenced was generally skills-based with the concurrent analytical discourse being largely 'inside' and informed by materials from the module lectures. That is, the technology skills were learned in informal space, but the discussion around how to apply these happened in seminars and within the course.

Jones and Shao (2011) contend that there is, 'no consistent demand from students to changes to pedagogy…no pent-up demand amongst students for changes in pedagogy or of a demand for greater collaboration' (Jones & Shao, 2011, p. 2). The discussion suggests that students are already making decisions that won't necessarily lead to demands for innovation in institutions. The use of informal learning via social media and web-based resources provides a space to learn that is then applied in traditional spaces that the students see as fixed and conventional. It is not a demand for a transformation from institutions but a change in their own practices that happens beyond the conventional learning locations.

Conclusion

1. In what ways did the choices of technology that students made support ideas of 'leading out' or 'telling' as means of communication and learning?

Although projects appeared rooted mainly in associationist/behaviourist models this contrasts with the emancipatory zeal found in the ways many students developed their skills and networks beyond the assignment outcome. The yang of the projects as teacher-led models contrasted to the yin of the student processes in developing these final projects. Although traditional 'talk and chalk' approaches remained prevalent it seemed likely that students were responding to what traditional institutional assignments tend to value, such as understanding convention, demonstrating relationships to established theories and reflecting institutional models. It was clear that 'leading out' characterised the ways students sought knowledge and that 'telling' was the model they presented back for institutional validation.

Bennett, Maton and Kervin (2008) argue that, 'only a minority of students were engaged in creating their own content and multimedia for the web, and a significant proportion of students had lower level skills than might be expected of digital natives' (p. 778). While this research does not offer a radically different reading it does demonstrate students often having skills and abilities they feel are not valued by the institution and therefore keep these hidden. The difference between educational representation in projects seemed to be reflective of institutional norms and not of the students' own preferences or abilities.

'Telling' as a response is then a repeating or mirroring of what previous educators and institutions had instilled as appropriate responses.

2. Did students demonstrate preferences for particular pedagogies that supported or challenged institution-led or student-led practices?

This research began with an interest in going beyond the rhetoric of technology as automatically transformative in relation to pedagogy. The findings argue that without transformation in how students are taught, in how teachers see the purpose of their role, then technology is not enough on its own to spark radical change. The students' projects indicated the dominance of traditional approaches but it was the latent, hidden processes that revealed where students were more adventurous and innovative. While the institution practice remains dominated by a yang of telling and instruction, lectures and exams, then the yin of collaborative learning will influence from the shadows.

The more adventurous choices of technology might have been expected to be based on technological awareness. However, they were often located in wider personal characteristics of confidence with increased awareness of other ways of living and working. Technology choice was grounded in authentic appraisals of context and not simply what technology skills students had. The student choosing to create DVDs rather than uploading to YouTube was not resistant to networking but evidenced a depth of understanding about their intended users. Websites used as spaces for distributed networks demonstrate reflection over who would use the project and what technology fits.

While yin yang tensions provide support for the need to challenge traditional approaches, it is important to recognise that some 'traditional' choices are rooted in wider appreciation of context. Some choices appear to be shifting toward progressive concepts but are loosely supported only by ideas that *the kids like it more.*

Limitations and concluding comments

This project was based on a small sample in a college-based HE context often considered non-traditional in terms of contemporary Higher Education. The research might then appear to have less relevance to those teaching much larger cohorts in traditional Higher Education Institutions (HEIs). However, the closer reading of student practices beyond the lectures indicates willingness to embrace learning in multiple spaces not necessarily owned or controlled by formal, institutional convention. The age of the students would have placed them all in the much-contested *Digital Natives* (Prensky, 2001; 2009) category. Yet, the diversity across the group in terms of interest in technology and willingness to use it indicated no common acceptance or shared ground. Similarly, while predominantly female there appeared nothing to suggest yin as a female trait or yang as a male-only approach. 'Leading out' was the preserve of female students, but the majority of students of both genders tended toward the yang of instruction. Roughly 75% of Education Studies students are female with a similar dominance of males on technology courses (HESA, 2016). This might make some difference in how technology influences pedagogical choice but our small cohort did not provide evidence of that here.

As a lecturer, the key message has been the necessity to allow spaces beyond the often rigid frameworks of formal learning. By accepting learning often occurs elsewhere it is possible to find in technology a shift away from digital literacy and skills-based competencies. Instead, technology becomes a space for students to play out, experiment and create their own philosophies-in-practice. Technology can help us share, communicate and collaborate and ultimately, it can also be threatening and cause a retreat to familiar and controlled safe practices. Educators need to recognise the potential for learning shaped by students and be courageous enough to discuss these practices, allowing them to inform what happens inside the institutions. The tension between yin yang suggests neither should dominate completely and our roles as educators needs to reflect both sides of the whole if we are to realise the potential of our pedagogical imagination.

Biography

Peter Shukie is a Lecturer in Education Studies at University Centre Blackburn College and a PhD student at Lancaster University. His interest in technology and pedagogy are central to his professional role and his thesis. He is founder of Community Open Online Courses (COOCS), an online learning space based on a Popular Education ethos. He was named in the Top 50 social media influencers in FE by JISC and his Education Studies degree modules were included in the JISC Exemplar Case Studies for Higher Education in 2015.

References

Atkinson, C., (2009). The Backchannel: How Audiences are Using Twitter and Social Media and Changing Presentations Forever. Berkeley: New Riders.

Barr R., & Tagg, J. (1995). From Teaching to Learning: A New Paradigm for Undergraduate Education. Change, 26(6), 12-25.

Beetham, H., & Sharpe, R. (2007). Rethinking Pedagogy for a Digital Age. New York: Routledge.

Bennett, S., Maton, K., & Kervin, L. (2008). The Digital Natives debate: a critical review of the evidence. *British Journal of Educational Technology*, *39*(5), 775-786.
doi: https://doi.org/10.1111/j.1467-8535.2007.0793.x

Biggs, J., (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*, 1-18.
doi: https://doi.org/10.1007/bf00138871

Facer, K. (2011). *Learning Futures: Education, Technology and Social Change.* London: Routledge.

Garrison, D. R., & Anderson, T. (2003). E-Learning in the 21st Century. New York: Routledge Falmer.
doi: https://doi.org/10.4324/9780203166093

Goicoechea, D. (2003). Heidegger – The Taoists – Kierkegaard. *Journal of Chinese Philosophy 30*(1), 81-97.
doi: https://doi.org/10.1111/1540-6253.00107

HESA, (2016). Data on Students by Subject Area and Sex 2014/15. Retrieved from: https://www.hesa.ac.uk/data-and-analysis/students/courses. Last Accessed 23 September 2016.

Jones, C., & Shao, B., (2011). *The net generation and digital natives: implications for higher education.* Higher Education Academy: York.

Kanuka, H. (2008). Understanding e-learning technologies-in-practice through philosophies-in-practice. In T. Anderson & F. Elloumi (Eds.) *Theory and Practice of Online Learning,* (pp. 91–118). Edmonton: Athabasca University Press.

Laurillard, D. (2008). The pedagogical challenges to collaborative technologies. *International Journal of Computer-Supported Collaborative Learning, 4*(1), 5-20.
doi: https://doi.org/10.1007/s11412-008-9056-2

Laurillard, D. (2012). *Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology*. London: Routledge.

Mayes, T., & DeFreitas, S. (2007). Learning and e-Learning: The Role of Theory. In H. Beetham, & R. Sharpe (Eds.), *Rethinking Pedagogy for a Digital Age*, (pp. 13-25). London: Sage.

Mayes, T., Morrison, D., Mellar, H., Bullen, P., & Oliver, M., (2009). *Transforming Higher Education Through Technology Enhanced Learning.* York: HEA.

Nagel, G. (1994). *The Tao of Teaching.* New York: Penguin.

Parchoma, G. (2011). Toward diversity in researching teaching and technology philosophies-in-practice in e-learning communities. In B. Daniel (Ed.) *Handbook of research on methods and techniques for studying virtual communities: Paradigms and phenomena,* Vol. 1 (pp. 61-86). Hershey, PA: IGI Global.
doi: https://doi.org/10.4018/978-1-60960-040-2.ch004

Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon, 9*(5), 1-6.

Prensky, M. (2009). H. Sapiens Digital: From Digital Immigrants and Digital Natives to Digital Wisdom. *Innovate: Journal of Online Education, 5*(3).

Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. *International Journal of Instructional Technology and Distance Learning, 2*(1), 3-10.

Yngve, V., (1970). On getting a word in edgewise. Papers from the Sixth Regional Meeting of the Chicago Linguistic Society, (pp. 567-577).