Teaching Beyond Connectivity: A Year Comparing Blended and Face-to-face Learning in a Secondary Classroom

New Zealand Journal of Teachers' Work, Volume 11, Issue 1, 93-106, 2014

NIGEL V SMITH
Laidlaw College

ABSTRACT

This article reflects and explores the findings of a year-long mixed methods research project in a New Zealand secondary classroom exploring social connectedness and blended learning. The performance and perceptions of students in two classes, in the same subject and taught by the same teacher, were compared to explore the differential impact of blended or face-to-face teaching modalities. Teacher reflections throughout the year are used to draw out surprising discrepancies between empirical findings and teacher perceptions. Further reflection on the nature of teacher-student relationships in blended learning contexts is informed by both theory and the experiences of students and the teacher who participated in the project.

INTRODUCTION

Twenty-first century life is characterised by a remarkable paradox. We are connected to each other in ever increasing ways. Innovative social technologies continue to flourish, providing ever more refined ways to reach out and to be reached by others. And yet, despite the proliferation in connectivity, the sense of actually connecting with others sometimes seems to waver somewhere just out of our reach. In the classroom, this general condition is focused more precisely. Not only do teachers grapple with their own negotiation of the panoply of stimuli that constitute modern life but they seek to guide students as they make their own journey through childhood and adolescence. For today's young people, a significant part of that journey revolves around learning to engage with social technologies. The focus of this article is the impact on learning and life of two related issues; social connectedness and communications technology.

We now have the ability to connect and communicate with many magnitudes more people than we could ever actually have time for. The question now is not 'How can I contact so-and-so?', but 'How can I find time for what I want to do amidst the flow of communication with those with whom I am in contact?'. And yet … this intensity of connectivity somehow doesn't always add up to feeling genuinely connected with others. Indeed, the possibility of being 'de-friended' or excluded from some mode of connectivity causes a subtle shift in the way we communicate. Each communication serves both a content purpose and a social purpose. With my status update or my tweet, I am often more concerned about projecting a certain kind of image of myself than about

genuinely telling others what I'm doing. In the crucible of adolescent social formation, this kind of interaction becomes an art form. Because we project part of ourselves when we interact with each other (using technology or not), each interaction in the name of learning is also an interaction with social impact.

My point of engagement with the question I'm exploring in this article was through teaching adolescents over a number of years, utilising ever-increasing amounts of technology to do so. For most students, and for myself, this way of teaching and learning was stimulating, enriching and rewarding. The diversity of content that students were able to grapple with, share with each other, engage with critically and integrate into their own understanding was broader and deeper than would have been the case without the technology. But I began to notice an increasing minority of students for whom the experience was not so positive. Some students disliked using technology, they got frustrated with its limitations. Others were gifted in ways that were not supported by the structures of online learning that were available. Occasionally, misunderstandings caused hurt when things were typed that should not have been typed.

I began to ask questions about where my pedagogy, and that of my colleagues, was taking us. Was I seeing the first fraying of edges around educational uses of technology? Are the gains from use of technology warranted in view of the potential loss of social skills that occasionally seem to be evident amongst some students? How can teachers balance the benefits to the many against the potential harms to the few? Is diversity amongst the student body constrained by the normative modes of learning? Does technology really enrich learning or is it just the extra effort of excited teachers that contributes the improvement? Is connectivity the prerequisite for connectedness, or its opposite?

INFORMING THE DEBATE

As teachers, we need to have our eyes wide open to both the positive and the negative if we are to provide a hopeful voice for our students as they navigate their course. It is beyond the scope of this article to provide a full summary of all the scholarly work that has been done in this area. I will merely seek to highlight some of the key points which have been demonstrated robustly in the academic literature, drawing on both the literature of online learning and that which more specifically addresses blended learning (learning that uses both online and face-to-face modalities).

Technology continues to enable teachers to engage their students in ever-increasing ways. Online tools for learning can make education more democratic, allowing a wider variety of students to have a voice (Concannon, Flynn, & Campbell, 2005). Those who are excluded or marginalised in physical classrooms have an equal chance to contribute online. The asynchronous nature of many online tools encourages students to spend more time thinking and reflecting on their learning (Meyer, 2003; Newman, Webb, & Cochrane, 1995; Warschauer, 1996), and those who think better at night are on an equal footing with those who have mental clarity in the morning. In turn, such increases in the opportunity for thinking and reflection may improve student academic performance (Means, Toyama, Murphy, Bakia, & Jones, 2010).

Increasingly, students expect online technologies to be a part of their learning experiences (Concannon et al., 2005), reflecting a normalisation of

online aspects within ordinary pedagogy. Likewise, teachers and school administrators have found that online tools increase both efficiency and effectiveness in the classroom and thus have become part of 'standard operation procedures' (Churches, Crockett, & Jukes, 2010). Both the normalising of online learning and the proliferation of technological solutions to educational challenges have also been associated with improvements in student performance (Hoskins & Van Hooff, 2005; Means et al., 2010).

Alongside these positive developments, researchers and practitioners have identified risks and potential losses from the use of technology-mediated learning tools. Social connectedness has been found to be necessary for effective learning irrespective of the learning modality (Brown, Collins, & Duguid, 1989; Rovai, 2002). However, the 21st century proliferation of information and communication technologies may undermine precisely this sense of social connection (Gergen, 1991; N. V. Smith & Morgan, 2010) even as it presents new opportunities for learning. Decreases in social connectedness have been observed, although the ways this can be built online are also becoming more clearly understood (van Tryon & Bishop, 2009).

Therefore, consideration of the effects of technology-mediated learning must go beyond academic performance to consider student perceptions if it is to adequately address the needs of 21st century learners. Research on the impact of online learning on student perceptions has delivered mixed results. Compared with traditional face-to-face tuition, students have been reportedly more satisfied (O'Malley & McCraw, 1999) and have viewed their learning more positively (Richardson & Swan, 2003) but conversely have also been observed to prefer face-to-face instruction and even resent technology-mediated learning (Noble, 2002). The persistence of individual differences in familiarity and enjoyment of technology-mediated learning has also been noted (Meyer, 2003). Amongst teachers, other researchers have documented a mixture of positive and negative experiences (Christianson, Tiene, & Luft, 2002; G. G. Smith, Ferguson, & Caris, 2001).

One response by both scholars and practitioners to the strengths and weaknesses of purely online modalities has been to advocate for a blended approach. Known as 'blended learning', this combines face-to-face learning experiences and the use of a range of internet and communication technologies. Traditionally, it has been conceptualised as the combination of the best of two modes; face-to-face and online (Ausburn, 2004). Others have suggested that it goes beyond merely combining these two modes but is qualitatively more effective than either because it utilises what is optimal from each mode (Garrison & Kanuka, 2004; Osguthorpe & Graham, 2003). It is also said to be more effective because there are typically more interactions involved in blended approaches than in either face-to-face or online (Dziuban, Hartman, Juge, Moskal, & Sorg, 2006). It is beyond the scope of this article to fully document the (dis)advantages that blended approaches have been argued to have. It perhaps is sufficient to observe that questions of efficacy in online and blended learning remain the focus of much scholarship (Drysdale, Graham, Spring, & Halverson, 2013; Halverson, Graham, Spring, Drysdale, & Henrie, 2014) and this small study makes a fresh contribution to that conversation.

It was striking that the majority of research has been conducted at tertiary level (Means et al., 2010), even as technology-mediated instruction has increasingly become commonplace in primary and secondary classrooms. This

article reports on a project designed to compare a blended approach to learning (combining face-to-face tuition and technology-mediated learning) with purely face-to-face classroom teaching at the secondary level, in terms of impacts on both student performance and student perceptions (of social connectedness, learning, enjoyment, teacher support and orientation towards technology).

METHODOLOGY

I selected two of my Year 12 classes in the same subject for comparison across the school year in 2011. The 'traditional' class was timetabled for 3 lessons per cycle which were delivered predominantly in a face-to-face modality and an 'experimental' class was timetabled for 2 face-to-face lessons per cycle plus a supervised study period. Students in the 'experimental' class were expected to complete learning activities based on an online platform[1] in lieu of the 3rd face-to-face lesson. The delivery mode of this 3rd lesson is the main variable that differed between the two classes. It is important to note that the remaining 2 lessons per cycle were as similar as possible in order to minimise the potential confounding effects of other differences between the respective learning experiences of the two classes.

The classes began with similar numbers (17 and 19 respectively). The number of boys and girls was approximately equal in both classes. No known differences existed between the two classes in terms of ability. Students were aged between 16 and 18 years old and were mostly of New Zealand European ethnicity. It is important to acknowledge the narrowness of this sample. Consequently the findings of this study were primarily applied to the school in which it was conducted with more tentative applicability in broader contexts.

Three types of measures were used in this study. First, comparison of the results of the two classes was based on the standard assessments they completed (a test, an essay plan and an essay). These results were taken to be the main measure of academic performance. Second, an online survey of the two classes was undertaken two-thirds of the way through the course. The survey measured: perceptions of learning; social connectedness (both adapted from Rovai, 2002); teacher support (adapted from Midgley, Feldlaufer, & Eccles, 1989); enjoyment of the course; and, preferences for face-to-face or online learning in general. Third, I commented on the progress of the classes regularly in a reflective blog which was open to colleagues but not students. This collection of reflections[2] proved critical in providing a present-focused account of my experience as the teacher during the year. This collection of reflections proved critical in providing a present-focused account of my experience as the teacher during the year.

RESULTS

While the detailed results of the study have been published elsewhere (N. V. Smith, 2013), I will briefly present some key findings to inform the present

[1] The online platform used was an interactive website developed using http://www.wikidot.com. I developed the structure and populated it with relevant content. It included discussion forums, interactive lessons and links to other web-based resources.

[2] Available at http://reflectingonrisk.blogspot.co.nz

discussion. Considering all the participants as a group, it was clear that those students who preferred face-to-face learning in general were the least likely to prefer online learning (and vice versa). Teachers and researchers alike need to recognise that there is a real diversity of preference for the use of technology in education amongst students.

Comparing the classes to each other, a very striking finding was that no difference emerged between the two classes in their academic performance on any assessment. Neither did differences emerge between the classes in terms of their preferences for face-to-face or online learning. No differences emerged on any variable by gender or other demographics measured.

The fact that no significant differences emerged between the classes in their actual performance in assessments can be taken two ways. On the one hand, this is evidence that blended (including technology-mediated) learning is likely to be at least as effective as face-to-face learning. On the other hand, the lack of any observed difference in results challenges the idea that blended or technology-mediated learning is any more effective per se than face-to-face learning. It is also notable that although no differences in actual performance were observed, students in the experimental class rated their own levels of learning more highly than those in the traditional class. Perhaps their perceptions were unfounded or perhaps this discrepancy reflects learning not fully captured by the standardised assessments used in this study. This finding may also be due to limitations in the project as the link between perceptions and performance is generally well established (Judge, Thoresen, Bono, & Patton, 2001; Mitchell, Chen, & Macredie, 2005).

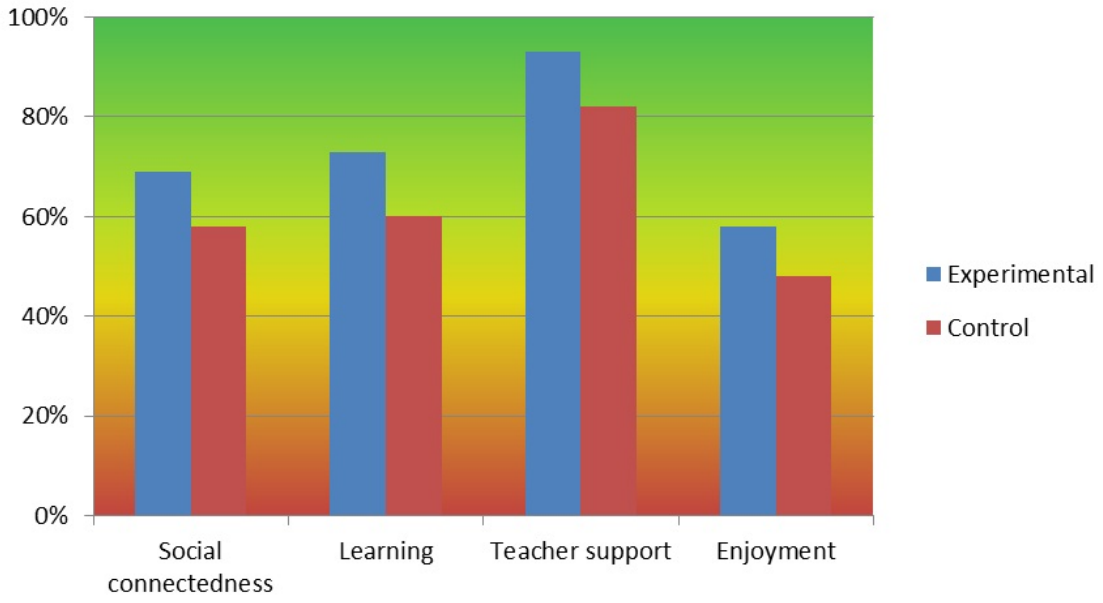

Figure 1. Differences in student perceptions between the classes

However, differences did emerge between the classes in their perceptions. As outlined in Figure 1, the students in the experimental class indicated they felt more connected with each other and better supported by the teacher than those in the traditional class. Students also felt they were learning more and enjoying the class more than those in the traditional class. Quite clearly, the students in the experimental class were experiencing something

differently from the fellow students in the traditional class and they viewed it positively.

While this is in line with findings elsewhere (O'Malley & McCraw, 1999; Richardson & Swan, 2003), the following extract from my reflective blog clearly indicates a perception that the opposite was true: that the experimental class was becoming less engaged and interested as the course progressed:

> Actually, it sometimes feels that my standard class are more engaged – they get more time engaging face to face with me ... maybe what is rare nowadays is not whizzbang online stuff but genuine human interaction ... and that's driving a higher level of engagement in the 'standard class'.

The findings of the survey, therefore, directly contradicted my own subjective experience of the class which I found to be a challenging and provocative finding. It called into question the accuracy of my intuitions about my students, something most teachers cherish as a core aspect of their professional identity. At the same time, survey instruments have their own limitations and a teacher's intuition is not to be dismissed lightly.

DISCUSSION

The contradiction between the higher ratings of enjoyment, support, learning and connectedness within the experimental class and my subjective experience stimulated significant reflection. Had my intuitions been in line with the findings, the question of whether I was simply influencing the students through my own expectations would have arisen. It has been well established that when teachers believe certain students will do better than others, they often do (Rosenthal, 1994). So to observe an effect that went against my intuition was methodologically reassuring, albeit pedagogically unnerving.

So what was going on? Why were the students who received less face-to-face class time feeling more supported and connected than those in the traditional class? When I explored this with the students, the point was made that the experimental class had an additional resource – available to them at any time of the day or night – that they could turn to for assistance with their coursework. They could interact with their fellow students, and to a lesser extent with me, outside the four walls of the classroom. The additional resources provided online functioned to broaden the students' engagement with the course, and secondarily with me and their fellow students. It is important to also acknowledge that the positivity observed may have been some kind of novelty effect related to the introduction of new technology as has been observed to occur elsewhere in New Zealand schools (Wright, 2010).

From my point of view as the teacher, however, things looked different. In several blog posts, I fretted about the efficacy of the online approach, expressing a clear sense that my relationship was weaker with the experimental class. And perhaps it was. But the students' connection with the *subject itself* was stronger in the experimental class. The subject had replaced the teacher as the core of the whole enterprise. While this felt positive for the students, it felt negative for me. Consider the following diagram which describes the different

instructional modalities in the 3rd lesson per week (the main difference between the classes):

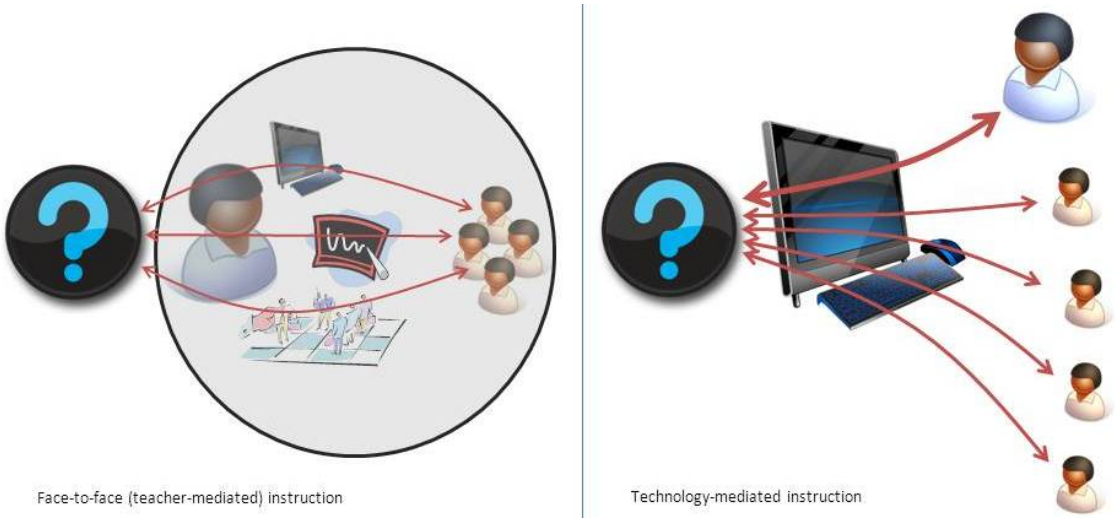

Figure 2. Teacher positioning across different instructional modalities

The left side of the diagram represents the face-to-face modality of instruction that I considered 'traditional'. Note that a range of learning activities occur within the boundaries of the class, including some use of technology, traditional 'chalk & talk', and other interactive games. This is not the stereotypical transmission model of pedagogy where almost all the content knowledge flows directly through the teacher to the students (Miller & Seller, 1985). However, almost all contact that students have with content knowledge is facilitated by the teacher within the classroom environment. As such, the teacher is still positioned centrally within the process of learning. And student experiences are generally similar, although there is some room for customisation.

In contrast, in the technology-mediated instructional modality (on the right of the diagram), students interact with the content knowledge through the structured online activities. While the teacher has created this structure (to a lesser or greater extent), the person of the teacher is not necessarily part of that interaction. The teacher may participate in these interactions but in a substantially parallel way to the way students interact with it. The teacher is present online in the same way fellow students are present. Thus students simultaneously have more direct access to the subject and the teacher has become more peripheral to the learning process. In my actual situation, the experimental class was exposed to a mixture of modalities; a fully online instructional modality was not part of the project.

Of course, realising that my negative impressions of the class were due to genuinely becoming less central to the learning processes of the students, who nevertheless were enjoying their learning more, was something of a blow to my sense of efficacy as a teacher. Perhaps it is this distancing that accounts for the negative attitudes of some teachers towards online learning (Christianson et al., 2002; G. G. Smith et al., 2001).

A caveat – learning is more than propositional knowledge

The picture that has emerged so far is one where some benefits of technology-mediated instruction have been identified and the intuition of teachers has been called into question. Late in the year of the project, another teaching moment illustrated the reverse. It also broadens the scope of what we consider learning to be, and for that reason, I believe it is an extremely salient reminder of why intuition remains critical for teachers, and indeed anyone.

In the last weeks of the year, I decided to set both classes working towards a prepared group debate. When the day came, the two debates eventuated astonishingly differently. My blog entry at the time captures this best:

> I was *totally* unprepared for the stark differences between the classes when it came time to stand up and present their arguments. The experimental class were nervous to the point of trying to resist the traditional format of the debate. Several speakers wanted to remain seated, or to address the class from where they sat, rather than the centre of the arena. The content of their arguments was minimal and failed to take up the allotted time.
>
> The traditional class had clearly done some serious preparation. Much pre-debate jousting upped the ante, and the speakers launched into their tirades with a passion that was electric. All had to be stopped as they ran over time. The depth of analysis was significant, the students having delved far deeper into the knowledge issues that extreme views on both sides of the moot involve.

This striking experience was fascinating, in that the mode of interaction was something the traditional class were much more used to. Discussion in the experimental class had throughout the year been mostly online (where it is asynchronous and students have the luxury of composing their comments without time pressure) and without the face-to-face interaction that some find threatening. Conversely, for the traditional class the debate was effectively a formalised version of the normal flow of discussion. Over the course of the year, they had become comfortable with direct interaction about the content issues that were central to the course. The mode of instruction had prepared them well for this demonstration of the knowledge. Not so for the experimental class.

For me, this event highlighted the complexity of the learning process. While there was a certain amount of propositional knowledge to be mastered in the course, learning is much more than that. Students need to be able to deploy their knowledge in a range of ways, including via technology, but also in more direct human interactions. While propositional knowledge can be learned via technology quite effectively, and perhaps even more enjoyably, the ability to deploy that knowledge in a range of settings seems to require at least some face-to-face experience. Alternatively, specific technologies may be more suited to some types of learning than others, and successful deployment of technology for learning requires alignment between the technology and the intended learning outcomes (Harris, Mishra, & Koehler, 2009; So & Kim, 2009). This may not have been the case for the students in the experimental class when asked to debate in a face-to-face setting.

Both of these interpretations suggest a possible specialisation in the way pedagogical approaches are used by educators, as suggested by Bowen (2006). Propositional knowledge may be usefully taught using technology-mediated instruction. If done well, this may result in deeper and more integrated learning on the part of most students. Class time, where the teacher and students are physically present together, can then be spent engaging with students on a more human level, extending them and following their interests and the teacher's instincts about which questions will most likely lead them the furthest. This kind of emphasis is also likely to result in a stronger relational bond between teachers and students.

Clearly, a study such as this has limited generalisability in terms of whether the empirical findings can be replicated elsewhere. There are many ways that the context of this study and other potential settings will differ, including ethnic mix, socioeconomic status, age (both students and teacher), curricular framework, national culture and urban/rural setting. What can be taken from this study, and needs to be explored further, are the tentative observations that the common focus on 'digital natives' may be obscuring variability within all age groups and that teacher insight into student experience may be limited. As technology-mediated learning approaches become more common across all levels of schooling, further work exploring the impact of teacher disconnectedness as a result of such modes of teaching would be valuable, particularly in secondary and primary education.

Where to from here?

In sum, what are the key lessons that we can tentatively distil from this small project? The four most significant findings for me (and those which I believe may inform future practice) include the following:

1) Some students prefer technology-mediated learning while others do not, supporting critiques of the 'digital native' hypothesis (Bennett, Maton, & Kervin, 2008; Prensky, 2001);
2) In general, students feel they learn more, enjoy their learning more, feel connected to the peers more and feel supported by the teacher when well-structured online learning opportunities are part of their experience;
3) Teachers may feel more disconnected from students when using a technology-mediated mode of instruction – this does not mean that students feel the same way. Students' experience may not be transparently evident to teachers, even those with significant classroom experience.
4) A differentiated approach, where technology is used for learning propositional content and class time emphasises relationality, may help teachers feel connected and strengthen students' ability to deploy their knowledge more broadly.

TEACHING BEYOND CONNECTIVITY

In conclusion, I began this particular journey of enquiry with questions about the effects of social technologies used for educative purposes. I was concerned that perhaps something inherent in the way technologies have become so pervasive in educational practice was undermining critical social connectedness amongst students and between teachers and students. These concerns were not supported in relation to students themselves. But the disjunction between my own intuitions and measured student perceptions threw the spotlight on the relational aspects of teaching as a human engagement with students.

There is an aspect of learning that is about more than increasing the stock of propositional knowledge ready for deployment on demand. This kind of learning is exhibited in whole-person acts of integration, where students bring their full selves to bear on a challenge, a scenario, a dilemma that requires their creativity, emotion and humanity in addition to their cognitive and intellectual capacity. And I am convinced that this kind of learning is developed by rich human engagement in a physically shared space, where the personalities of students and teachers are free to spark inspiration together. At the same time, social technologies offer us richer and more effective ways to structure propositional learning. Utilising these technologies for the things they are best at is likely to strengthen the positive perceptions students have of their overall learning experience.

As I reflect on the project described in this article I am reminded of the distinction between communication and communion (Peterson, 1992). Though it remains critical for teachers to effectively communicate with their students (both listening and speaking), such a focus on propositional knowledge is necessary but not sufficient. In contrast, communion is the act of being jointly present with students in such a way that the learning experience becomes a shared memory, where new insight is grounded in the reality of a student's whole life, not merely their intellectual comprehension. Such transformative learning revolves around a teacher's actions as a person, not their words as a facilitator of knowledge development (Miller & Seller, 1985).

New technologies offer us increasing opportunities to improve the depth and breadth of our communication with students. We should harness them and seek to use them to develop ever-richer learning experiences which will equip our students intellectually for their future. Beyond this, we should also seek to be more intentional about the precious time we have to commune with students face-to-face. Our actions as whole people have the potential to inspire not just their minds but the very direction of their lives. Education has this potential and, though the positioning of teachers may change, our role as a guide to our students will remain. Let us press on beyond connectivity to genuine connectedness.

REFERENCES

Ausburn, L. J. (2004). Course design elements most valued by adult learners in blended online education environments: An American perspective. *Educational Media International*, *41*(4), 327–337.

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:10.1111/j.1467-8535.2007.00793.x

Bowen, J. A. (2006). Teaching naked: Why removing technology from your classroom will improve student learning. *The National Teaching & Learning Forum*, 16, 1–5.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32–42.

Christianson, L., Tiene, D., & Luft, P. (2002). Examining online instruction in undergraduate nursing education. *Distance Education*, *23*(2), 213–229.

Churches, A., Crockett, L., & Jukes, I. (2010). *The digital diet: Today's digital tools in small bytes*. Kelowna, BC: 21st Century Fluency Project.

Concannon, F., Flynn, A., & Campbell, M. (2005). What campus-based students think about the quality and benefits of e-learning. *British Journal of Educational Technology*, *36*(3), 501–512.

Drysdale, J. S., Graham, C. R., Spring, K. J., & Halverson, L. R. (2013). An analysis of research trends in dissertations and theses studying blended learning. *The Internet and Higher Education*, *17*, 90–100.

Dziuban, C., Hartman, J., Juge, F., Moskal, P., & Sorg, S. (2006). Blended learning enters the mainstream. In C. Bonk & C. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, *7*(2), 95–105.

Gergen, K. J. (1991). *The saturated self: Dilemmas of identity in contemporary life*. New York: Basic.

Halverson, L. R., Graham, C. R., Spring, K. J., Drysdale, J. S., & Henrie, C. R. (2014). A thematic analysis of the most highly cited scholarship in the first decade of blended learning research. *The Internet and Higher Education*, *20*, 20–34.

Harris, J., Mishra, P., & Koehler, M. (2009). Teachers' technological pedagogical content knowledge and learning activity types: Curriculum-based technology integration reframed. *Journal of Research on Technology in Education*, *41*(4), 393–416.

Hoskins, S. L., & Van Hooff, J. C. (2005). Motivation and ability: Which students use online learning and what influence does it have on their achievement? *British Journal of Educational Technology*, *36*(2), 177–192.

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, *127*(3), 376-407.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Retrieved from http://eprints.cpkn.ca/7/

Meyer, K. A. (2003). Face-to-face versus threaded discussions: The role of time and higher-order thinking. *Journal of Asynchronous Learning Networks*, *7*(3), 55–65.

Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Student/teacher relations and attitudes toward mathematics before and after the transition to junior high school. *Child Development*, 981–992.

Miller, J. P., & Seller, W. (1985). *Curriculum perspectives and practice.* ERIC. Retrieved from http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=ED272497

Mitchell, T. J. F., Chen, S. Y., & Macredie, R. D. (2005). The relationship between web enjoyment and student perceptions and learning using a web-based tutorial. *Learning, Media and Technology*, *30*(1), 27–40.

Newman, D. R., Webb, B., & Cochrane, C. (1995). A content analysis method to measure critical thinking in face-to-face and computer supported group learning. *Interpersonal Computing and Technology*, *3*(2), 56–77.

Noble, D. (2002). *Digital diploma mills: The automation of higher education*. New York: Monthly Review.

O'Malley, J., & McCraw, H. (1999). Students' perceptions of distance learning, online learning and the traditional classroom. *Online Journal of Distance Learning Administration*, *2*(4). Retrieved from http://www.westga.edu/~distance/ojdla/winter24/omalley24.html

Osguthorpe, R. T., & Graham, C. R. (2003). Blended Learning Environments. *Quarterly Review of Distance Education*, *4*(3), 227–233.

Peterson, E. (1992). *Under the unpredictable plant: An exploration in vocational holiness.* Grand Rapids, MI: Eerdmans.

Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon*, *9*(5), 1–6.

Richardson, J. C., & Swan, K. (2003). Examing social presence in online courses in relation to students' perceived learning and satisfaction. Retrieved from https://www.ideals.illinois.edu/handle/2142/18713

Rosenthal, R. (1994). Interpersonal expectancy effects: A 30-year perspective. *Current Directions in Psychological Science*, *3*(6), 176–179.

Rovai, A. P. (2002). Development of an instrument to measure classroom community. *The Internet and Higher Education*, *5*(3), 197–211.

Smith, G. G., Ferguson, D., & Caris, M. (2001). Teaching college courses online versus face-to-face. *The Journal*, *28*(9), 18–22.

Smith, N. V. (2013). Face-to-face vs. blended learning: Effects on secondary students' perceptions and performance. *Procedia-Social and Behavioral Sciences*, *89*, 79–83.

Smith, N. V., & Morgan, M. (2010). Politics and pedagogy: Discursive constructions in the IB Theory of knowledge–guide. *The Curriculum Journal*, *21*(3), 299–312.

So, H.-J., & Kim, B. (2009). Learning about problem based learning: Student teachers integrating technology, pedagogy and content knowledge. *Australasian Journal of Educational Technology*, *25*(1), 101–116.

Van Tryon, P. J. S., & Bishop, M. J. (2009). Theoretical foundations for enhancing social connectedness in online learning environments. *Distance Education*, *30*(3), 291–315.

Warschauer, M. (1996). Comparing face to face and electronic discussion in the second language classroom. *CALICO Journal*, *13*(2/3), 7–26.

Wright, N. (2010). *e-Learning and implications for New Zealand schools: A literature review*. Ministry of Education. Retrieved from http://dev-classes.stac.school.nz/pluginfile.php/28104/mod_resource/content/0/948_ELearnLitReview.pdf

Manuscript Submitted: January 22, 2014
Manuscript Accepted: September 15, 2014

ABOUT THE AUTHOR

NIGEL V SMITH
Laidlaw College

Nigel V Smith is a senior lecturer in the School of Education at Laidlaw College, Auckland, New Zealand. He teaches curriculum development, health and wellbeing studies, technology studies and has given guest lectures in research methods and postmodern epistemology.

He previously worked as a high school teacher in K-12 schools in New Zealand and the Philippines.

His research interests include justice issues in cross-cultural encounters, the impact of internet technologies on society, and exploring relationally sound pedagogies that optimise technology use in education.

Email: nsmith@laidlaw.ac.nz
Telephone: (09) 837 9748
Address: c/o Laidlaw College, Private Bag 93104, Henderson, Auckland 0650.