

MIXING IT UP: EXPERIENCES WITH THE COMBINED USE OF TECHNOLOGY AND OTHER METHODS TO ENHANCE LEARNING

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I. INTRODUCTION

In colloquial terms, the phrase ‘to mix it up’ means to engage in some form of confrontation or battle. In a real sense, this describes the process of engaging different methods of teaching undertaken while researching this paper — it has been a battle to establish an effective learning environment for business students undertaking a business law course. In 2007, the process included introducing the use of technology to enhance students’ learning experiences. Between 2007 and 2011, the use of these technological tools has increased so that these tools now form a major part of the learning process for both off- and on-campus students.

This paper discusses ongoing research that has been conducted with students in a second-year commercial law course by the academic teaching the course (the teacher). The course is one of several business law courses offered by the School of Accountancy at Massey University. The students in the course are predominantly business students undertaking either a Bachelor of Business Studies or a Bachelor of Accountancy degree. This article considers some of the reasons why particular tools and strategies were chosen; the ways in which the tools and strategies used interact with face-to-face sessions; and the strengths and limitations of each (from the perspective of both students and the teacher). Results related to retention rates and grade point averages (GPAs) are also considered, which suggest that the overall teaching and learning experience has improved. A key reason for this improvement may be because different strategies, including the use of technology in teaching practice, have been incorporated.

The ongoing and reflective nature of the research described in this article means that it will never be entirely finished, so this article is merely a commentary on what the research has shown so far in terms of the effect of the use of technology. The research has essentially been a tool to inform and give insight to the teacher as to the ways to improve her practice. But this commentary may also be a valuable record for other teachers who are making their own investigations into the use of technology in teaching.

II. TEACHER RESEARCH

The methodology employed in this research is that of educational action research, also known as ‘teacher research’. Teacher research can be described as a context-driven inquiry that places participants as the ‘knowledge holders’ and the ‘knowledge seekers’.¹ The methodology looks to introduce change as a result of a purposeful investigation within the researched environment and also involves a re-evaluation of the ways in which this change has succeeded in resolving issues that were identified by the participants.

Teacher research is subject to some debate and criticism due to differing views as to what constitutes knowledge and research in the realm of teaching and learning. One view is that education research should be the domain of the distanced academic who researches on teaching

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1 John Elliott, ‘Research on Teachers’ Knowledge and Action Research’ (1994) 2(1) *Educational Action Research* 133; Susan Noffke and Bridget Somekh, ‘Action Research’ in Bridget Somekh and Cathy Lewin (eds), *Research Methods in the Social Sciences* (Sage, 2005) 89–96.

and adheres to established epistemology and methodology to establish ‘formal knowledge’² about teaching and learning. This view is challenged by the teacher research movement, which holds that knowledge about teaching and learning cannot be fully attained unless it embraces the voice of those who are ‘living the experience’ — that is, the teachers and students. The teacher research view also holds that research about teaching and learning does not observe a rigid adherence to formal methods of data collection.³ Knowledge can be created through descriptions of spontaneous events and the interpretations of these events by the observer.

The most prominent way in which these two views come into conflict concerns the value and use of teacher research. Formal academic views suggest that many teacher research projects provide only a practical, context-specific form of knowledge that is unsuitable for dissemination to a wider audience because it cannot be generalised. The teacher research view maintains that knowledge generated by teacher research projects may be ‘local’ knowledge, but that publication of ‘how teachers theorize and interpret their work’⁴ can be useful to the broader teaching community. This knowledge may enable teachers to recognise situations similar to their own and allow comparison or questioning of the interpretations given against their own interpretations and those of other theories.⁵ In Elliot’s view, efforts to resolve these conflicts has led to a situation where:

educational action research, originally conceived as a practical philosophy, has been distorted by the methodological discourse of the social sciences and sucked into the battle between the qualitative and quantitative paradigms. This has meant that published accounts of action research have tended to be dominated by descriptions of, and justifications for, the method of research as opposed to the representation and discussion of the understandings and insights it has generated.⁶

This does not mean that a published account of action research should be completely devoid of information on how the researcher obtained his or her interpretations. For example, information on the ways in which the researcher attempted to overcome internal validity issues (such as the use of different perspectives) can be useful to the reader to ascertain whether the publication represents an ‘honest voice’. This paper therefore provides a brief account of why this particular methodology was chosen and the methods used in the research. However, the main focus is on the actual experiences and the reflections and interpretations of those experiences.

There were several reasons for this choice of research methodology. One of the main reasons was that this form of applied research has been closely linked to reflective practice,⁷ which is the approach to teaching used by the teacher undertaking the research. The teacher adopted this model of teaching after a decision to move from a transmission model of teaching to a student-focused model. After some frustration and reflection (aided by reference to relevant

2 Gary Fenstermacher, ‘The Knower and the Known: The Nature of Knowledge in Research on Teaching’ in L Darling-Hammond (ed), *Review of Research in Education* (American Educational Research Association, 1994) 3, 20.

3 Tina Cook, ‘The Purpose of Mess in Action Research: Building Rigour though a Messy Turn’ (2009) 17(2) *Educational Action Research* 277; Marilyn Cochran-Smith and Susan L Lytle, ‘Teacher Research: The Question That Persists’ (1998) 1(1) *International Journal of Leadership in Education* 19.

4 Cochran-Smith and Lytle, above n 3, 31.

5 Patricia Lambert Stock, ‘Toward a Theory of Genre in Teacher Research: Contributions from a Reflective Practitioner’ (2001) 33(2) *English Education* 100.

6 Elliott, above n 1, 37.

7 Philippa Cordingley, ‘Constructing and Critiquing Reflective Practice’ (1999) 7(2) *Educational Action Research* 183.

literature on teaching),⁸ the teacher came to an understanding that teaching is more than just adopting a ‘set model’ and using it regardless of the context in which learning takes place. In her situation, the teaching environment required a mix of transmission and student-focused models. Reflective practice allowed her to ascertain the strengths of the different models and the most effective ways that these models could be incorporated into her particular learning environment on a continuing basis. The use of this teaching model by the teacher meant that a methodology that embraces evaluating, implementing and re-evaluating strategies through robust internal reflection was highly desirable as it allowed her to use methods which were already incorporated into her teaching practice.

The main source of data for this research has been the teacher’s observations. These have been recorded in personal teaching journals and notes since 2004. These entries contain descriptions of the events, and primary assessment of those events in light of information from two other sources — student perceptions and relevant literature. These reflections have formed the basis for implementing changes to the teaching methods used. This process has been continually repeated to assess the impact of any changes and to produce further lines of inquiry. Throughout this article, direct reference will be made to the teacher’s observations, the student feedback, as well as the reflections and changes made. The process of reviewing literature is not expressly stated, but is incorporated through the inclusion of some of the literature consulted in the process of discussing the observations and feedback.

Student perceptions, referred to in this paper as ‘student feedback’ or ‘student comments’, have been obtained through university-administered teaching evaluation surveys for the course, teacher administered surveys, and teacher–student dialogue. The university-administered teaching evaluations are distributed to on- and off-campus students in a hard-copy format. The survey asks a series of closed questions on different areas of teaching for a particular course. The closed questions require students to respond on a scale indicating their satisfaction or dissatisfaction for different areas. The surveys also allow for student comments. These comments are provided to the teacher in raw form without alteration. These surveys have been conducted for the course each year from 2004 to 2010.

The teacher-administered surveys were conducted in 2005 and 2011. The 2005 survey was administered only to the on-campus students. This survey consisted of closed and open questions that asked students to evaluate which topics taught were the ‘hardest’ and the reason why students found them difficult. The first 2011 survey was administered to both the on- and off-campus students and asked both open and closed questions about student experiences with a variety of teaching tools. The second 2011 survey was conducted only with off-campus students. It asked for students’ preferences as to study materials being available in electronic or hard-copy form.

Both the university and teacher-administered surveys were anonymous and students could choose whether they wished to participate. Demographic information was not asked in the university-administered surveys or in the 2005 teacher-administered survey. The response rate for the on-campus university-administered surveys and the 2005 teacher-administered survey was, on average, 52 per cent. The response rate for the off-campus surveys was much lower,

8 Some of the literature consulted included: Lawrence Braskamp, ‘Towards a More Holistic Approach to Assessing Faculty as Teachers’ in Katherine Ryan (ed), *Direction in Teaching and Learning Vol. 83: Evaluating Teaching in Higher Education: A Vision for the Future* (Jossey-Bass, 2000) 19; Stephen Brookfield, *Becoming a Critically Reflective Teacher* (Jossey-Bass, 1995) 1–27; Sarah M Dinham, ‘What College Teachers Need to Know’ in Robert Menges and Maryellen Weimer (eds), *Teaching on Solid Ground* (Jossey-Bass, 1996) 297; Noel Entwistle et al, ‘Conceptions and Beliefs about Good Teaching: An Integration of Contrasting Research Areas’ (2000) 19(1) *Higher Education Research and Development* 5; Daniel Pratt, *Five Perspectives on Teaching in Adult and Higher Education* (Krieger Publishing Company, 1999) 33–53; Paul Ramsden, *Learning to Teach in Higher Education* (Routledge, 1992) 109–19; John Biggs, *Teaching for Quality Learning at University* (Open University Press, 2nd ed, 2003).

with an average of 15 per cent (although the second 2011 survey had a response rate of 30 per cent).

The informal teacher–student dialogue took place through one-on-one and group discussions, emails, telephone conversations, and online discussion postings and comments. In some of these situations, comments provided by students were recorded in the teacher’s journal. While it would have been ideal if these journal entries were always made within a short period of time after the encounter, they were often written many hours or days after the event. For email dialogue, however, the teacher has been able to refer to verbatim comments and statements.

The primary type of data that has been used to guide teacher reflection and implement strategies for change has been qualitative data. The main reason for using qualitative data is that it has added to the observation experience of the teacher in a more meaningful way than statistical data. As Crawford and Cornett have commented:⁹

Teaching and learning are very complex acts, ones that cannot (and should not) always be controlled. Complex actions and interwoven relationships cannot always be well-represented by a number, score, or set of statistics.

Both forms of student feedback (formal surveys and informal dialogue) have provided different avenues for the teacher to consider when making her reflections and evaluations. The feedback provided by students has also aided the process of inquiry by giving comments and information about new areas to explore.

The teacher journals and student feedback have been coded into three main themes, and a number of sub-themes. Some themes have remained constant over the research period, while others have changed from year to year. The three main themes were assessment, content and engagement with the content. It is the third theme that is the subject of this article.

The teacher compared the student feedback to teacher observations to detect similarity and differences between the teacher’s and students’ perceptions of student engagement with the content for a particular year. These comparisons, and the questions raised by them, were discussed with colleagues, and formed a basis of enquiry to find relevant literature that addressed the issues raised.

III. INITIAL DECISION-MAKING PROCESS

An early observation (in 2004–06) made by the teacher that indicated there may be issues with the learning environment occurred when assessing student assignments and exams. It was noted that students generally performed well when explaining legal rules but many students had difficulties when applying these rules to fact scenarios. Student feedback in 2004–06 contained some comments that the course was difficult as there was too much material to memorise. The teacher reflected that the inability to apply information to new situations could in some situations be a result of ‘surface learning’, where students focus on tasks such as memorising and recall for the purposes of specific assessments rather than using other levels of thought, such as reflection and analysis of the topics.¹⁰ The problem with surface learning is that ‘remembering’ does not always mean ‘understanding’ the information, hence there can be difficulties in applying the information to new situations. This means that students engaging in surface learning may have success in assessments that are geared towards the ability to recall facts or figures, but struggle in demonstrating how those facts relate to one another.¹¹

This idea was also supported by the fact that the predominant teaching model being used was the transmission model of teaching, where students are generally expected to remember the

9 Patricia Crawford and Jeffrey Cornett, ‘Looking Back to Find a Vision: Exploring the Emancipatory Potential of Teacher Research’ (2000) 77 *Childhood Education* 37.

10 Biggs, above n 8, 14.

11 Ibid 15.

information provided and repeat it back on request.¹² This indicated that a change in teaching style could result in a change in student learning approaches to the course. However, it was also recognised that a change to the teaching model may not succeed with all students as there are some who do not wish to go beyond the surface in particular topics. In these situations, no amount of encouragement or alteration of teaching style may shift these students.¹³

It was decided that a change to the teaching model should incorporate an active learning approach. In this approach, learning is a result of students engaging in activities designed to increase their understanding, while the teacher's role is to facilitate student exploration of knowledge.¹⁴ The activities may include dialogue with the teacher or other students, or it may be self-testing activities.¹⁵ The students are not viewed as passive participants in the learning process and the teacher is viewed not as the 'sage on the stage', but instead as the 'guide on the side'.¹⁶

Student feedback from pre-2007 cohorts confirmed the need to move towards a more active means of teaching, since it suggested that many of the students may have experienced difficulties with 'distance'. This was not just geographical distance but also transactional distance. Transactional distance has been described as 'a psychological and communications gap, a space of potential misunderstanding between the inputs of instructor and those of the learner'.¹⁷ While this distance is increased when there is physical distance, it can also occur when teacher and students engage in face-to-face learning. The ability to reduce transactional distance can depend on the extent to which students and teachers interact in dynamic dialogue and the degree of flexibility within a program to adjust to student needs.¹⁸

The teacher considered that incorporating active learning could enhance 'dynamic dialogue'. However, a further review of relevant literature also suggested that, while this form of learning has a greater potential to increase deep learning, it is not the sole means to this end. The success of some activities can depend wholly on the existing knowledge base of the student as suggested by Brookfield, who commented that the idea of cutting down lecturing as it 'induces passivity in students and kills critical thinking' may not always be a good idea —students still need grounding in the subject.¹⁹ A lack of grounding, or base knowledge, can impact on the ability of the students to respond to learning challenges, such as developing their own critical analysis of a topic. If the student does not perceive that they have sufficient foundation knowledge, they will not be keen to explore 'unknown' territory. It was decided that giving students 'grounding' meant relaying the base knowledge in a variety of ways (written and oral), since students receive and interpret information differently.

The teacher's reflections led to a twofold strategy to address the aim of enhancing the learning experience and student engagement with the content. The objectives were to:

- increase student success by using a variety of learning tools that cater for differences in learning styles and student abilities; and
- encourage active learning by providing opportunities for interaction among both on- and off-campus students.

12 Under this approach, the role of the teacher is to 'accurately present content and help learners accurately reproduce that same content': Ramsden, above n 8, 40, 109–19.

13 Biggs, above n 8, 16 acknowledges that there are limits and that 'even under the best teaching some students will maintain a surface approach'.

14 Ramsden, above n 8, 113.

15 As Dinham explains, 'students can even learn actively during a lecture if we plan the lecture to include advance study outlines, mock quiz questions, pauses, demonstrations, opportunities for synthesis, and "one minute papers"': Dinham, above n 8, 301.

16 Braskamp, above n 8, 20.

17 Michael Moore, 'Distance Education Theory' (1991) 5(3) *American Journal of Distance Education* 1, 1.

18 Ibid.

19 Brookfield, above n 8, 4 .

To achieve these aims, the teacher investigated a number of different teaching options, including the use of technology.²⁰ The technological tools and strategies chosen included using MP3 files of recorded lectures, ‘personal response systems’ (PRS), and ‘Connect’, which is an online meeting room.²¹

The 2007 student feedback suggested that some of the technology tools used had helped to enhance the learning process. The use of Connect sessions in which the law was verbally explained and discussed with students in real time (which were also recorded) had assisted off-campus students to feel less isolated and understand concepts. However, the feedback was not all positive — 2007 on-campus students who had used the PRS had commented that they felt it was not beneficial due to disruptions caused by the teacher and students being unfamiliar with the technology.

The teacher experiences and student feedback were evaluated to achieve the stated objectives. As part of this evaluation, the teacher discussed the matter with colleagues and also referred to the University statement on blended learning. This statement included the observation that:

Blended learning is not about doing away with face-to-face teaching or merely combining new digital technologies with conventional forms of learning. Rather, it involves purposeful decisions about learning design and fundamentally rethinking papers and programmes to take advantage of new forms of learner engagement through the removal of time, place and situational barriers.²²

The teacher reflected on the use of the tools and observed that, with the on-campus students, the new technology could have been viewed as an addition to conventional teaching in many places rather than as an integrated part of the learning process. The lack of an explanation as to how the technology was intended to aid the learning process could have contributed to student dissatisfaction. As a result of the teacher reflections, it was considered that greater familiarity with the technology was needed to succeed. It was difficult for students to trust the use of the technology when the teacher had difficulties making it work. The teacher also needed to overcome student anxiety with the new technology by explaining how the tools fitted into the students’ overall learning experience.²³ However, as discussed in the following part, explanations and familiarity with the tools did not resolve all issues — there continues to be mixed reactions from students as to whether these methods of teaching do fully accommodate the students’ learning preferences.

20 The forms of technology selected after discussion with computer technicians within the School of Accountancy. These technicians were able to provide advice as to several alternatives that could fit the teaching requirement for the course. Reference was also made to case studies from other universities, such as Matt Bower and Debbie Richards, ‘The Impact of Virtual Classroom Laboratories in CSE’ (2005) 37(1) *Proceedings of the 36th SIGCSE Technical Symposium on Computer Science Education* 292.

21 The technology chosen provided a mix of ways in which the students could interact during the course. It allowed for teacher–learner interaction and also learner–learner interaction — both of which were important to help build a community of learning. On the importance of having a sense of community and interaction for off-campus students, see Stacey Ludwig-Hardman and Joanna C Dunlap, ‘Learner Support Services for Online Students: Scaffolding for Success’ (2003) 4(1) *International Review of Research in Open and Distance Learning* <<http://www.irrodl.org/content/v4.1/dunlap.html>>; Maylene Y Damoense, ‘Online Learning: Implications for Effective Learning for Higher Education in South Africa’ (2003) 19(1) *Australian Journal of Educational Technology* 25.

22 Massey University, *What is Blended and Distance Education* (6 September 2011) <<http://www.massey.ac.nz/massey/about-massey/university-management/avc-academic/distance-and-blended-education/what-is-blended-and-distance-education.cfm>>.

23 Susan Toohey, *Designing Courses for Higher Education* (Open University Press, 1999) 69.

IV. CONTINUED EXPERIENCES WITH MIXED METHODS OF TEACHING

In this part, four tools employed in teaching the business law course will be discussed. Each of these tools have been used since 2007 to varying degrees. In this time, the teacher has made a number of observations about their effectiveness. The learning tools provided to students are a mix of resources. Some resources provide new information to students, designed to give them a grounding in the various topics in the course. The resources include written materials and verbal explanations through ‘Presenter’, which is a program that allows audio to be added to PowerPoint presentations. Other resources allow students to gain new experiences and to discuss and apply new knowledge in specific contexts through interaction with the teacher and/or other students. These resources include PRS, which enables all students in an on-campus class to provide responses to questions or statements through handheld units; Connect, which is an online meeting room used to discuss problem questions with off-campus students; and activities such as role play, which allow on-campus students to experience situations related to certain areas of law. Some of these resources are technology-based, while others are traditional face-to-face resources.

A. Presenter

Presenter is an Adobe add-on that allows audio files, videos and quizzes to be inserted into a PowerPoint presentation. Students view each PowerPoint slide and hear the associated commentary. The presentation can be viewed either by letting the program move on to each slide automatically or students can select particular slides that they wish to view and listen to. Students can also pause, rewind or fast-forward a slide commentary. The teacher used this tool to provide base knowledge (lectures) on topics in the course.

The use of Presenter was increased following positive feedback from off-campus students in 2007, because it allowed them to listen to verbal explanations of the topics. One such comment by a student was:

I think that I may have struggled with some of the concepts had they not been verbally explained to me. It’s one thing reading it but another being explained in plain speak.

By 2010, all topics in the paper had a Presenter lecture for off-campus students to access. In 2011, as a result of on-campus student feedback²⁴ and teacher reflection on the results of using Presenter with off-campus students, it was decided to use Presenter lectures with on-campus students. The Presenter lectures were not given to on-campus students as an addition to traditional face-to-face lectures — Presenter took the place of those lectures. The reason for this decision was to allow students more time to engage in active learning opportunities, such as discussion and working together to solve problem-based questions. Both the teacher and the students wanted to increase active learning opportunities but, because of time constraints, this increase would have meant reducing lecture content, which would have lessened the opportunities for students to gain grounding in the topics. Using Presenter lectures to provide base content in a traditional lecture style on the different topics could give students the grounding needed to engage in active learning sessions. Since these Presenter lectures were accessed by students outside of class time,²⁵ the existing class time could be used for active learning opportunities without the need for increased face-to-face sessions.

24 Students from 2004–10 had commented that they would like more opportunities to work on problem questions, discussion and quizzes.

25 Students are expected to dedicate 12 hours a week to their study. Before 2011, students had three hours of class (face-to-face) time in which they had traditional lectures with some interactive learning. In 2011, students had two hours of class time, which was dedicated to interactive learning. This gave the students 10 hours per week in which to listen to the lectures and read the weekly readings.

Student feedback from off-campus students between 2007–11 and on-campus students in 2011 on the use of Presenter highlighted some common themes. Students commented that Presenter enhanced their learning by allowing them to listen to the lectures more than once. This appears to have been especially beneficial for students for whom English is a second language. On-campus students enjoyed the flexibility of being able to listen to the lectures when and where they wanted when preparing for face-to-face sessions, as the following comment from the 2011 survey demonstrates:

The recordings were great ... You can study at home and then have more time for workshops/tutorials at school that help you applied [sic] what you have learnt ...

A major technical limitation for the Presenter lectures was that they could be made available only online via a web link. These files can be saved as PDF files, but often they are very large which makes uploading and downloading difficult. This meant that students needed internet access to retrieve and listen to the files. It also placed restrictions on where the verbal explanations could be heard. This difficulty is illustrated in following statements made by students:

One problem was that I could not upload them to my mp3 player, which did not allow me to listen to them any time I want, such as listening to them in the car ...

I didn't have internet access at home so it required me to come to uni [sic] to listen to them. When the lectures were 3 hours I did not listen to the whole of the lecture ...

A lack of internet access was not the only difficulty. Off-campus students commented in the second 2011 survey that, after spending all day in front of a computer at work, they welcomed opportunities to study away from a computer. These comments were made in relation to whether the students would prefer study materials such as the course 'study guide' (which is a type of course textbook written by the teacher) as hard copy or as an electronic book, not in relation to Presenter. However, the comments emphasised that students enjoyed having a variety of methods to assist study, so they are relevant to the limitation problems identified with Presenter. To overcome the problem of Presenter lectures being available only online, it is intended in future to upload the MP3 audio files (which are smaller and so can be more easily uploaded or downloaded) to the course website, along with the PowerPoint files and the Presenter web link. This will enable students to listen to the lectures in a variety of environments.

The aim of Presenter was to provide on-campus students with base knowledge that they could use to engage in active learning situations — it was never intended as a 'stand-alone' method of teaching. It was therefore concerning that a number of on-campus students (approximately 40 per cent) did not attend the face-to-face sessions regularly. The access difficulties mentioned by students may have contributed to the rate of non-attendance as the students may have felt they were not prepared. Another contributing factor could be the learning styles of students and their attitudes and concepts of learning. In this situation, it is possible that some students wished to engage in this course as passive learners so did not feel that the face-to-face active learning sessions would enhance their own learning. In the context of online learning, a preference for passive learning has often resulted in students being reluctant to use technology which is interactive,²⁶ as Akerlind and Trevitt have stated:

26 For example, in a study of students in a language course, it was found that passive learners were less likely to use the online version of a course which had interactive options: Judith Poole, 'E-Learning and Learning Styles: Students' Reactions to Web-Based Language and Style at Blackpool and Fylde College' (2006) 15(3) *Language and Literature* 307. Prior learning experience in which technology has been used can also influence student attitudes towards the use of technology: see Matti Haverila and Reza Barkhi, 'The Influence of Experience, Ability and Interest on E-Learning Effectiveness' (2009) 1 *European Journal of Open, Distance and ELearning*, <http://www.eurodl.org/materials/contrib/2009/Haverila_Barkhi.pdf>.

The reality is that most students' educational experiences in school rooms and lecture theatres have supported the more passive conceptions. This sets up the unfortunate situation in which students whose main educational experiences have been as a passive recipient of information may suddenly be introduced to computer based courses providing for them unexpected opportunities for active, self-directed learning for which they are largely unprepared.²⁷

In the course, the 'passive teaching' was via the Presenter lectures. This meant that, for the students who wanted to engage in passive learning, the computer-based aspect of the subject fulfilled their learning needs rather than face-to-face delivery. Even though students were given the online and face-to-face sessions as part of an integrated package of learning, prior learning experiences and learning styles generated from those experiences may have strongly influenced some students to choose the learning tools that had the most value for them. It could, therefore, be of benefit to ascertain the preferred learning styles of the students and their attitudes towards technology at the start of the course to see whether there may be a conflict with the teaching styles used. If such issues are identified, students would need to be given assistance to a move from a passive mode to a more active one.

Another factor related to student learning styles is that on-campus students may have been used to lower levels of self-directed learning. With traditional on-campus learning, students are told when and where they have to attend lectures and workshops — they often have little or no experience of self-managing their learning.²⁸ With the Presenter lectures, students had to make their own decisions about how and when they listened. If students did not manage their time appropriately, they may have found that they had not covered the material in time for the face-to-face sessions. This problem may also have been increased by the fact that the Presenter lectures could be accessed at any time during the course. Some students may have concentrated on other more immediate tasks and left the Presenter lectures until a later date. This issue will be the subject of future exploration. At this stage, it is only a question raised by the teacher and one that other teacher researchers may wish to investigate.

There are two considerations that tend to support the idea that on-campus students may have had difficulty with self-directed learning. The first consideration is the way in which students accessed the Presenter lectures. Student usage of the Presenter lectures showed that, for on-campus students, a small group would regularly access the files during the week; a larger group would 'cram' by viewing the lectures just prior to face-to-face sessions; while another (small) group did not access the files until much later. In comparison, a much larger proportion of off-campus students accessed the lectures regularly, rather than 'cramming'. It is possible that, because off-campus students may have traditionally had to have higher levels of self-management for their learning, this is reflected in a more disciplined approach to the management of their study time. Again, this is an area which requires further research.²⁹

The second consideration to support the theory that lower levels of self-management contributed to the levels of self-directed learning comes from teacher observations made during one face-to-face session in which the students showed a very high level of preparation. These students had been told in advance the specific areas of the Presenter lecture to which they would need to listen to be prepared for the session. It appeared that, when some students were given

27 Gerlese Akerlind and Chris Trevitt, 'Enhancing Learning through Technology: When Students Resist the Change' (1995) *Proceedings of ASCILITE 1995* <<http://www.ascilite.org.au/conferences/melbourne95/smtu/abstracts/akerlind.html>> 2.

28 Merryl Hammond and Rob Collins, *Self-Directed Learning: Critical Practice* (Nichols/GP Publishing, 1991).

29 There does appear to be several different views as to self-directed learning in distance learners and also other learners, so this is an area where the teacher is researching a number of sources to gain an understanding. For an example of some of the differences in perspectives, see Elizabeth Murphy and Maria A Rodriguez-Manzanares, 'Learner Centredness in High School Distance Learning: Teachers' Perspectives and Research Validated Principles' (2009) 25(5) *Australasian Journal of Educational Technology* 597; Ludwig-Hardman and Dunlap, above n 21, 1–15.

more precise direction about the portions of the Presenter, lecture to which they should listen for each session, they were better able to prepare — essentially, when the study was lecturer-directed rather than self-directed.

Although it is desirable to move students towards more self-directed learning, in this situation, it could be that ‘the evolution was too abrupt’ and that ‘the sudden influx of freedom coupled with a lack of guidance and support’ led to some students being unable to cope.³⁰ To overcome this, it would be preferable to work on gradually building self-directed learning skills by providing more precise information on how to manage their time initially, but then introducing activities to allow students to obtain skills so that they can manage their own learning program.³¹

B. Personal Response System (PRS)

This system has been used in some topics taught from 2007–10. In 2011, the use of the system was increased to all topics taught. The intention, when using this system during face-to-face sessions held on campus, was to encourage increased student participation in discussion sessions and to provide a means to check on student understanding of the concepts they had studied. The PRS works via hand-held control pads that link to a receiver. Students input their responses to multiple-choice or true/false questions or statements on the pad and send the answer to the receiver. These answers are collated by the software which displays a graph of the overall responses. The questions are incorporated into a PowerPoint file, so can be used as part of a full presentation or can be set up as a separate session.

The PRS provides a greater opportunity for student interaction compared to traditional face-to-face means of interacting, since the responses are anonymous (when the graph is shown, neither the students nor the lecturer are able to identify who has given each response). This anonymity assists in obtaining the views of less confident students who may not respond in a traditional manner (show of hands) for fear of giving an incorrect response. In the 2011 student feedback, this aspect was particularly noted by students with comments such as:

It is better using the clickers then [sic] putting up your hand as it allows you to commit to an answer without the risk of answering wrong out loud ...

Using clickers was an amazing way to answer without any hesitation of being wrong ...

As a larger number of students respond to questions posed via the PRS systems (the teacher observed that in each session there was approximately a 95 per cent response rate), this allows the teacher to better gauge the overall understanding of the class in respect of certain topics.

The system can help to engage students in discussions on why they hold a particular view (or gave a particular answer). The overall results displayed allow them to see that they are not alone in holding that view, encouraging them to speak with greater confidence. An important observation about building student confidence for PRS sessions is that students must have time to assess the material that is the subject of the session. In 2011, on-campus students were struggling with PRS sessions and were reluctant to share reasons for their answers — even when they had a correct answer. When the PRS session was moved to later in the week (allowing

30 Chao Boon Kheng Leng Teo and Robert Gay, ‘Concept Map Provision for E-Learning’ (2006) 3(67) *International Journal of Instructional Technology and Distance Learning* 17. See also Knowles who stated, in relation to self-directed learning, ‘[s]tudents entering into these programs without having learned the skills of self-directed inquiry will experience anxiety, frustration, and often failure, and so will their teachers’: Malcolm Knowles, *Self-Directed Learning: A Guide for Learners and Teacher* (Prentice Hall, 1975) 15.

31 As stated by Arnold: ‘path to online autonomy is determined by guidance provision as well as the availability of opportunities for freedom’: Lydia Arnold, ‘Understanding and Promoting Autonomy in UK Online Higher Education’ (2006) 3(67) *International Journal of Instructional Technology and Distance Learning* 33, 40.

more time to study the materials), there were a greater number of correct answers and students were more willing to come forward with discussion about their answers. This reinforces the idea that students need sufficient grounding in a topic to respond successfully to the challenges involved with active learning.

System capability is another consideration before choosing PRS. This can include whether the questions have to be set in advance, or if they can be added in during a face-to-face session. The current PRS must be set up in advance, so it does not allow for opportunities that may arise during sessions to pose additional questions through the control pads. Instead, any additional questions must be posed in a more traditional way. Another concern with the current system is that students are only able to answer from a preset range of options — there is no facility for students to input text. This limits both the range of answers and the degree of dialogue. This limitation may be desirable in a larger class where a high volume of text/open answers may be difficult to correlate quickly. However with the class sizes in the on-campus course managing increased student interaction via the systems is feasible, so there is a need to investigate ways to overcome this limitation.

The manner in which the PRS is likely to be used is another factor to consider when choosing a system. If the teacher wishes to use the PRS to create discussion about the results and why student chose an answer, it is suggested to use a system that allows for polling without the need to assign a ‘correct’ answer to the answer the question posed. This is suggested as a result of observations made by the teacher that, even if a majority of students enter an incorrect answer, they are often still reluctant to discuss their answer if it is labelled as ‘wrong’. By removing the label, students can discuss their answers more freely and the lecturer can guide the students towards a correct answer rather than forcing them to the answer (assuming the questions have a right/wrong aspect).

As a result of these concerns, the teacher has assessed a number of different options and is now looking at an alternative system³² that allows a greater number of activities to be implemented easily during a session to allow greater flexibility in how the students interact.

C. Connect

Connect is an online meeting room in which students and the teacher can participate in ‘real time’ meetings. The program used is Adobe Acrobat Connect Professional. Connect was used in 2007–09 to have tutorial sessions with off-campus students. From 2010–2011, there have been tutorial sessions on all topic areas and it has been used to provide step-by-step guidance on how to find legal resources.³³ The meeting room contains different ‘pods’ for discussion and for sharing resources, such as a computer screen, videos and PowerPoint. The two main objectives in using this tool were to allow off-campus students opportunities to engage in active learning and to help build a sense of community with their learning. Student feedback indicates that the use of Connect appears to be successful in doing this as illustrated by the comment:

The technology used makes me feel like I am not doing it alone and as I am from (a small New Zealand town)³⁴ with two small children and wasn’t able to go to the contact course, I found the tutorials priceless ...

The Connect program can allow the teacher to use audio and also a webcam to communicate with the students. The students respond either with audio or by using text pods to type in answers, questions and comments. The teacher’s choice has been to have student communication by typing rather than voice as it was felt that, in situations where there were large numbers of

32 The system is called ‘WordWall’ see: Visual Education, *WordWall* (2011) <<http://wordwall.co.uk/>>.

33 There were no students present for this ‘meeting’, but ‘Connect’ was used in preference for ‘Presenter’, since it allows the sharing of a computer screen with students. By using ‘share computer’, the teacher was able to show the step-by-step process on the computer as to how to find different materials.

34 The name of the town has been removed to preserve student anonymity.

students, granting voice-audio rights may lead to some anarchy if discussions were not carefully controlled. Also, if some students do not have the ability to communicate by audio, this could lead to the typing students being ‘silenced’ by students with audio.

Regardless of which method of communication is used, Connect can present challenges to both student and teacher. When students have audio rights, they will usually have to ‘raise their hand’ and wait to speak so there is not the same flow of conversation that occurs in face-to-face teaching. Also, the teacher must be vigilant to ensure that each speaker is given equal opportunity so that the conversation does not end up being ‘controlled’ by a small group of students. Students who communicate by typing can input questions or comments whenever they wish, which does allow more student freedom as to when they want to communicate — but expertise on a keyboard may be a limiting factor for some students.

An important aspect of the use of Connect is the loss of non-verbal communication. Smith observed that:

whether teachers are talking or not, they are always communicating. Their movements, gestures, tones of voice, dress and other artifacts, and even their ages and physiques are continuously communicating something to the students. In like manner, students are continuously communicating with their teachers.³⁵

In a face-to-face session, a student may use a number of physical gestures to show their lack of understanding about information being relayed to them. This provides the teacher with clues that further information, or a different way of explaining the information, is required. With Connect, unless communication involves the use of visual aids such as webcams, most of these non-verbal clues may be missing. This means that teachers must use other strategies to ascertain whether or not their intended message is being understood by students; for example, the teacher may need to ask probing questions such as ‘did this help to clarify that area?’

If teachers are aware of the communication challenges, and are able to adapt their teaching style to the Connect environment, this tool can be a very effective means of promoting active learning for off-campus students.

D. Role Play

The aim of the role play was to introduce main ideas and concepts that relate to a particular area of law *before* students were informed of the specific legal rules that relate to that area of law. Role play has been used in on-campus classes from 2009–11. The use of role play was, in part, inspired by Wiggins and McTighe, who have suggested teaching by a process which begins with ‘questions designed to suggest inquires that require key content’ rather than ‘starting with definitions, laws, and an array of facts’.³⁶ In using this process of ‘discovery’, students are encouraged to think of what influences the creation of laws.

The role play also served the purpose of providing students with a personal experience that they could later use to associate with the specific legal rules. Often on-campus students have had no personal experience of the situations to which certain areas of law relate and, consequently, topics related to these areas have been perceived as more ‘difficult’ than others, such as consumer law, where the students have had some personal experience. The ability to link existing knowledge to new knowledge is an important part of the learning process since students are better able to process new information when it can be related to existing knowledge.³⁷ The use of role play can therefore enhance students’ abilities to make connections between their experiences and new knowledge of the legal rules that impact on that experience.

35 Howard A Smith, ‘Nonverbal Communication in Teaching’ (1979) 49(4) *Review of Educational Research* 631, 633.

36 Grant Wiggins and Jay McTighe, *Understanding by Design* (Merrill Education, 1998) 143, ch 9.

37 Graham Gibbs, ‘Improving the Quality of Student Learning through Course Design’ in Ronald Barnett (ed), *Learning to Effect* (Taylor and Francis, 1992) 149.

To illustrate how this has been accomplished, one role play that has been used relates to the area of agency law. Students are put into groups of three and are given a situation with which they have some familiarity (such as asking for an extension on an assignment). One student will have a role of ‘agent’; the other students will act as ‘principal’ and a ‘third party’. The scenario will involve the ‘agent’ being placed in a position of having to go beyond their express instruction when discussing an agreement with the ‘third party’. After the ‘agent’ has gone back to their ‘principal’ and told the principal what they have agreed/not agreed, the entire class engages in discussion about their experience as an agent, principal or third party. This discussion has generally raised issues such as how the ‘principal’ felt when the ‘agent’ made an agreement they did not want, how the ‘third party’ would feel if the ‘principal’ did not honour the agreement, and what things the ‘principal’ may have done to make the ‘agent’ or the ‘third party’ think the agreement would be acceptable. This discussion can open the path to students understanding why certain legal rules have been developed when agents are used, and it gives them a practical experience to which they can relate when finding out about these rules.

V. RESULTS FROM THE USE OF MIXED METHODS

In 2007, when the mix of technology with other traditional methods was first implemented, the teacher could make only a one-year comparison between students. Since then, the teacher has been able to build on student results for off-campus students to gain a better picture of the influence that technological and other changes have made on certain areas.

Figure 1: Off-Campus Students

Before Using Mixed Methods

Year of study	Number of passes/ Number graded	Per cent of students not completing the course	Grade point average ³⁸
2004	88.84 per cent	30 per cent	2.04
2005	89.47 per cent	38 per cent	2.00
2006	78.26 per cent	31 per cent	2.02

After Using Mixed Methods

Year of study	Number of passes/ Number graded	Per cent of students not completing the course	Grade point average
2007	92.50 per cent	22 per cent	3.09
2008	93.06 per cent	28 per cent	2.72
2009	91.21 per cent	16 per cent	3.05
2010	93.55 per cent	24 per cent	3.20

³⁸ Each letter grade is assigned a grade point value, on a 0 to 9 scale, with fail grades assigned a point value of 0, and A+ grades a point value of 9. The results here have only minor adjustments to the initial grades achieved by the students. These adjustments have been made when a student achieved on the border-line of another grade. Over the years shown, this adjustment has been used, on average, only for less than 0.2 per cent of students each year.

As can be seen in figure 1, in the years prior to introducing tools such as Presenter and Connect, the pass rate was generally in the 80 per cent to 90 per cent range; the number of students not completing was in the 30 per cent to 40 per cent range; and the GPA was around 2. In the four years following the introduction of the technology, all of these measures have been consistently higher. The effect on student retention rates is especially noteworthy, and could indicate some success in reducing the effects of distance, which can lead to feelings of isolation and low retention rates. There are other factors that have occurred since 2007 which may also contribute to these results. These include the use of a ‘free choice’ assignment,³⁹ and also the introduction of students being allowed to bring a one page sheet with writing on both sides into the final exam.⁴⁰

Figure 2: On-Campus Students

Before Using Mixed Methods

Year of study	Number of passes/ number graded	Per cent of students not completing the course	Grade point average
2004	85.29 per cent	12 per cent	2.74
2006	80 per cent	8 per cent	2.67
2006	82.05 per cent	9 per cent	2.95

After Using Mixed Methods

Year of study	Number of passes/ number graded	Per cent of students not completing the course	Grade point average
2007	84.78 per cent	4 per cent	3.3
2008	93.75 per cent	8 per cent	4.12
2009	85.71 per cent	2 per cent	3.44

With the on-campus students, the main forms of technology used until 2011 were PRS and access to some recorded Connect tutorials that had been done with off-campus students. The on-campus students also engaged in role play from 2007 onwards and also had the a free choice assignment. In 2011, the students had all base content delivered through Presenter, rather than face-to-face lectures. The results for these students are mixed; however, there does appear to be some improvement in retention rates, pass rates and GPA.

Factors such as the ratio of male to female students has remained constant (in both on- and off-campus courses); however, there was a substantial decrease in international students from 2006 until 2011 in the on-campus course. While there is a danger in using factors such as these

39 The use of such assignments can assist to promote student autonomy, which in turn leads to enhanced student motivation and responsibility for learning: see Arnold, above n 31; Deborah Stipek and John Weisz, ‘Perceived Personal Control and Academic Achievement’ (1981) 51 *Review of Educational Research* 101.

40 Bruinsma noted that high levels of anxiety can decrease motivation and the ability of students to perform; allowing an extra resource into an exam may help decrease exam anxiety: Marjon Bruinsma, ‘Motivation, Cognitive Processing and Achievement in Higher Education’ (2004) 414 *Learning and Instruction* 549.

to stereotype learner achievements — since stereotyping by age, gender or race⁴¹ can lead to assumptions and patterns of teaching that are not suited to the particular group of students⁴² — this may also have played a role in the on-campus figures.

It is of some concern that the pass rate in 2011 is lower than in 2010 and the GPA lower in 2011 than the previous four years, since 2011 represented a much higher use of mixed methods. However, these results may in part be due to student abilities — there have been a series of ‘up and down’ results since 2007. It may also be due to the factors that have been previously discussed in relation to student learning styles and self-directed learning. What is of note is that, in 2011, students who regularly attended the face-to-face sessions on average performed better than students who did not attend. While this could suggest that it is a mix of learning opportunities (passive and active) that fully enhances student success, it must also be acknowledged that these students may have had higher levels of self-management or compatible learning styles which would account for success in this learning environment. It also appears that students for whom English is a second language performed better in 2011 compared previous years. The 2011 feedback from these students suggests that the ability to have the Presenter lectures was beneficial for them, since they were able to listen and re-listen to the content. This may mean that the use of tools such as Presenter to impart base content may produce improved results for such students.

VI. CONCLUSION

The efforts to ‘mix it up’ were aimed at enhancing learning through the use of a variety of learning tools that would recognise different learning styles, increase active learning opportunities and therefore reduce the gap between learner, other learners and the teacher. In many ways, these goals have been accomplished. Student feedback has generally been positive from off-campus students that the use of mixed methods created a sense of community and enhanced their learning experience. This feedback is, in part, supported by a constant demonstration of improved passing rates, retention and GPAs.

The experience with on-campus students has demonstrated a greater need to ensure that the teaching style that is used is complementary to learner abilities. While there have been some improvements in success rates, further development of the teaching program is needed to increase these. In particular, a greater recognition of prior learning experience and preferred learning styles is needed to allow an understanding of when strategies may be needed to move students towards active learning styles and acquire self-management skills.

The success rate of the 2011 on-campus students has raised some concern over the use of mixed methods for these students. In an initial assessment of these results, it may be easy to

41 There is particular danger in unsupported stereotypes or stereotype that can be discredited; for example, Niles found that the stereotype of Asian students being rote learners did not hold up in the study that was conducted in an Australian university — although there were some differences in learning strategies and motivation between cultures: Sushila Niles, ‘Cultural Differences in Learning Motivation and Learning Strategies: A Comparison of Overseas and Australian Students at an Australian University’ (1995) 19(3) *International Journal of Intercultural Relationships* 369.

42 While these studies can be valuable in providing general statistical information as to what type of person is more likely to achieve or not achieve, they give real guidance only when they are combined with other aspects of research that can help to explain why variables such as age or gender did make a difference. For example, Frantz and Wilson found that men were more likely to achieve success in a legal course. This was credited to the fact that such courses tend to be more computational than verbal. In essence, it was claimed that ‘students appear to perceive the material to be more of a numeric puzzle to be solved rather than a literature to be synthesized’. Therefore, these findings may not be applicable in situations where the course is not viewed in this way or where both male and female students share the ability and inclination towards computational styles: see Paul Frantz and Alex Wilson, ‘Student Performance in the Legal Environment Course: Determinants and Comparisons’ (2004) 21(2) *Journal of Legal Studies Education* 225, 230.

‘blame’ the students for not having self-management skills, or it may be easy to ‘blame’ the teacher for not realising this and introducing a new style of teaching too quickly rather than in gradual stages. However, successful education should not be about blame — it should be about challenges. Challenges are situations in which we may not always have the right means ‘on hand’ to achieve success; instead they are situations that can be conquered eventually through reflection and adapting our thinking and resources to overcome the barriers to success. This comment encompasses the view of what teacher research is about — it is a process of weaving through the complex nature of teaching, where challenges are met through reflection and implementation of change through that reflection. The purpose for publishing this research is to inform teachers about the progress to date and to, perhaps, illuminate issues they may be dealing with. It is hoped that sharing these experiences of how an individual teacher has met challenges can benefit all of those in the legal teaching community.