MANAGING DISTRACTION AND ATTENTION IN DIVERSE COHORTS: 21ST CENTURY CHALLENGES TO LAW STUDENT ENGAGEMENT

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It is imperative that we consider the use of current and emerging technologies in terms of the nature of our learners, the physical environment of the lecture theatre, and how technology may help to support appropriate pedagogies that facilitate the capturing of student attention in active engaging learning experiences. It is argued that a re-evaluation of pedagogy is required to address the tech-savy traits of the 21st century law student and the extent to which their mobile devices are capable of not only distracting them from learning but also enhancing face-to-face learning experiences.

I   INTRODUCTION

21st century students of law who choose to attend face-to-face lectures typically come armed with an array of digital, internet enabled devices. These devices are a double-edged sword in that they may simultaneously distract students from their learning while having the potential to enhance the face-to-face learning experience. This article considers the notion of managing distraction as a barrier to law student engagement and explores how teaching 21st century law students requires a fundamental re-evaluation of pedagogy in order to assess the extent to which technology in teaching can redirect distractive energy into greater student engagement in active learning experiences.

The purpose of this article is not to discredit traditional lectures. Given the extent of institutional commitment to the infrastructure of lecture theatres, and the economies of scale they present in offering face-to-face learning to large cohorts, lectures appear to be a fixture in higher education. Rather this article focuses on possibilities for transforming the lecture through opportunities for student engagement.

The first part (Part II) of this article considers the extent to which some technology embraced in teaching and learning to date has reinforced passive learning opportunities and, while supportive of more flexible attendance modes, has contributed to declining attendance in face-to-face lectures. The misfortune here is that technology offers greater possibilities than mere content delivery. The opportunity presents itself to exploit those features of technologies, such as social

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media, that facilitate connection, collaboration and communication to take full advantage of the promise for student engagement inherent in face-to-face learning.

Part III considers the nature of our students and the distractions they bring with them into face-to-face learning environments. It is recognised that these distractions present a serious barrier to student engagement while also presenting opportunities for new pedagogical approaches. Possibilities for law student engagement will be viewed through the lens of attention economics suggesting that even within traditionally passive learning environments, pedagogy ought to include strategies directed at deploying and structuring attention. This analysis includes consideration of how carefully designed blended learning experiences using web based tools may assist with scaffolding and transforming learning into a more engaging, active learning experience. In this sense, students can be distracted back into the lecture theatre by using the very devices that are presently distracting them and posing serious barriers to learning.

The analysis presented in parts II and III are premised upon the argument explored in Part IV: that a reconsideration of pedagogy is required to evaluate the extent to which changes within the prevailing learning framework may best be exploited to ensure effective teaching and learning. The clear ramifications arising from the relationship between quality assurance and approaches to teaching and learning law in a new standards focussed environment will be explored.

Part V considers the capacity of emerging technologies as solutions to student engagement through encouraging collaboration, communication, scaffolding skill development and managing attention and distraction. In this way emerging technologies can be seen as meeting the needs of the modern learner and the objectives of effective teaching and learning for increased student engagement within a quality assurance landscape.

Regardless of the plethora of technologies at the disposal of legal educators, at the heart of effective teaching and learning must be an understanding of how best to engage our students. This requires an appreciation of their learning preferences, the learning environment and how these factors mesh with the fundamental tenets of effective teaching and learning.

II   IS TECHNOLOGY IN TEACHING RESPONSIBLE FOR DRIVING PRAGMATIC LAW STUDENTS AWAY FROM FACE-TO-FACE LEARNING?

Embracing flexible delivery options to support learning in various attendance modes has been a key driver for the adoption of technology in teaching law; live lectures may be available via podcast and course materials available online. Yet, it is doubtful this replication of traditional lecturing techniques into a modern medium has been successful in supporting face-to-face learning given the associated decline in student attendance - empty seats in lecture theatres speak volumes.[1] It seems attendance is rendered an unnecessary inconvenience when

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[1]   Lillian Corbin, Kylie Burns and April Chrzanowski, 'If you teach it, will they come? Law students' class attendance and student engagement' (2011) *Legal Education Review* 13; Sara

the learning experience is replicated, if not improved, in a more flexible delivery mode.[2]   A fresh approach is needed to enhance the face-to-face learning experience and to make attending lectures a meaningful and relevant learning experience for increasingly tech-savy 21st century law students.

Face-to-face learning modes offer genuine opportunities for engagement. Where face-to-face learning is coupled with a use of technology the resulting blended learning environment offers opportunities for greater student engagement through active learning.[3]   Lessons can be taken from research into successful online courses demonstrating the value of co-operative and collaborative teaching and learning activities with a strong teacher presence to foster engagement of students with one another and with the unit content.[4] Technology facilitates more than just new modes for content delivery. Connectedness is vital: '[s]tudents not only need to feel connected to the unit content but also need to feel connected to the instructor and other students in the course, so emphasis on the social presence of the instructors makes sense.'[5]   So what communication activities (between lecturer/ student and student/student) can help students to feel more connected and engaged with the course?   Online social networking is one technological innovation that requires consideration given its demonstrated capacity for facilitating connections, collaboration and communication.

Learning is a profoundly social experience. Social networking lends its self to the social experience of learning, especially to the extent that communicating via micro blogging facilitates collaboration and conversation.   The popularity of social media may be more anthropological than generational; this is evidenced by the sheer extent of its saturation among users with a capacity to connect. Social use of online networking technologies such as *Facebook* and *Twitter* is staggering; *Facebook* has at least 845 million active users world-wide;[6] 60

Dolnicar, 'Should we still lecture or just post examination questions on the web? The nature of the shift towards pragmatism in undergraduate lecture attendance', (2005) 11(2) *Quality in Higher Education* 103; Sara Dolnicar, Sebastian Vialle, Katrina Matus and Wilma Vialle 'Can Australian Universities Take Measures To Increase the Lecture Attendance of Marketing Students?' (2009) 31 (3) *Journal of Marketing Education* 203.

[2] Corbin, Burns, and Chrzanowski, above n 1; Suzan Kardong-Edgren and Roberta Emerson, 'Student Adoption and Perception of Lecture Podcasts in Undergraduate Bachelor of Science in Nursing Courses' (2010) 49 (7) *Journal of Nursing Education* 398, 401.

[3] Paul Ramsden, *Learning to Teach in Higher Education* (Routledge, 2nd ed, 2003); John B. Biggs and Catherine Tang, *Teaching for Quality Learning at University* (Open University, 3rd ed, 2007); Graham Gibbs and Trevor Habeshaw, *Preparing to Teach: An Introduction to Effective Teaching in Higher Education* (Technical and Education, 2nd ed, 1992).

[4] Marcia Dixson, 'Creating Effective student engagement in online course: What do students find engaging?' (2010) 10 (2) *Journal of the Scholarship of Teaching and Learning* 1; E.C. Boling et al, 'Cutting the distance in distance education: Perspectives on what promotes positive online learning experiences' (2012) 15 *Internet and Higher Education* 118, 120; Phil Goertzen and Carolyn Kristjansson, 'Interpersonal dimensions of community in graduate online learning: Exploring social presence through the lens of Systemic Functional Linguistics' (2007) 10 *Internet and Higher Education* 212.

[5] Dixson, above n 4, 3 citing D.R. Garrison, T. Anderson and W. Archer, 'Critical thinking, cognitive presence and computer conferencing in distance education' (2001) 15 (1) *The American Journal of Distance Education* 7.

[6] Facebook, *Statistics,* (11 March 2012) Facebook <http://www.newsroom.fb.com/content/default.aspx?NewsAreaId=22>.

percent of users are aged 26 or older with 20 percent of users aged 45 or older.[7] Most *Facebook* users access *Facebook* via mobile devices and these users are twice as active on *Facebook* as non-mobile users.[8] Twenty-first century learners are highly likely to be users of social networking technology. Harnessing the appeal of social networking may offer greater opportunities for collaboration and communication within learning experiences.

Positive correlations have been found between active engagement in online social networking and student engagement.[9] Social networking offers possibilities for pedagogy based on socio-cultural and collaborative learning, since these theories of learning value peer-peer discussion and feedback as part of the learning process. Learning environments of this nature resonate with notions of emergent learning 'as learning in which the actor and the system co-evolve'.[10] These learning environments embrace active learning strategies. Learning theory suggests that active engagement with unit material, other learners and the teacher is more engaging and results in deeper learning and improved learning outcomes.[11]

A re-evaluation of pedagogical practice in legal education in light of technological innovation and the possibilities it offers for learning is warranted. Such reconsideration of pedagogy is underpinned by recognition of a presently disparate pace of change among the dynamic elements within the learning framework: people, spaces, technology and pedagogy.[12]

III   THE 21ST CENTURY LAW STUDENT AND DISTRACTION

A   Mobile technology: The elephant in the room

Much has been written about the challenges of teaching a generation 'born digital',[13] comfortable with the seemingly endless variety of powerful, mobile,

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7   Inside Facebook, *December data on Facebook's US growth by age and gender: Beyond 100 million,* (20 June 2010) Inside Facebook: Tracking Facebook and the Facebook Platform for Developers and Marketers <http://www.insidefacebook.com/2010/01/04/december-data-on-facebook's-us-growth-by-age-and-gender-beyond-100-million/>.

8   Facebook, *Statistics*, (20 June 2010) Facebook <http://www.facebok.com/press/info.php?statistics>.

9   Higher Education Research Institute (HERI), *College freshmen and online social networking sites* <http://gseis.ucla.edu/heri/pdfs/pubs/briefs/brief-091107-socialnetworking.pdf>; R. Junco, G Heibergert and E. Loken, 'The effect of Twitter on college student engagement and grades' (2011) 27(2) *Journal of Computer Assisted Learning* 119.

10   Roy Williams, Regina Karousou, Jenny Mackness 'Emergent Learning and Learning Ecologies in Web 2.0' (2011) 12 *International Review of Research in Open and Distance Learning* 39, 40.

11   Ramsden, above n 3; Biggs and Tang, above n 3; Gibbs and Habeshaw, above n 3.

12   Richard Evans and Anne Matthew, 'Should we still lecture? Reconsidering pedagogical approaches to promote student engagement, challenging the traditional lecture' (Paper presented at International Technology Education and Development Conference, Valencia, 5-7 March 2012) <http://www.iated.org/concrete2/paper_detail.php?paper_id=22419>.

13   John Palfrey and Urs Gasser, *Born Digital: Understanding the first generation of digital natives* (Basic Books, 2008), 4; Mark Prensky, 'Digital natives, digital immigrants' (2001) 9 (5) *On the Horizon* 1; Diana Oblinger and James Oblinger, 'Is it Age or IT: First Steps Toward Understanding the Net Generation' in Diana Oblinger and James Oblinger (eds), *Educating the Net Generation* (Educause, 2005), [2.1] <http://www.educause.edu/educatingthenetgen>; Diana Oblinger, 'Emerging Technologies for

internet enabled, digital devices that pervade their day-to-day living. It has been argued that this profoundly affects the way this generation receives information and learns;[14] functioning at their best when networked and provided with instant feedback, 'gratification and rewards'.[15] Oblinger and Oblinger consider that it is this generation's attitude to the internet which is most striking: to them, the internet is 'like oxygen'.[16] They have never known life without either the internet or access to technology, and cannot imagine having to do so.[17]

These observations ought to be acknowledged within the construct of challenges faced by legal educators teaching increasingly diverse undergraduate cohorts which are neither dominated by students identifying as 'net Gen',[18] generation Y, school leavers, mature students, first generation tertiary students, graduate entry students nor those who followed alternate pathways to their undergraduate legal studies. Yet cohort wide, law students increasingly demonstrate that they are not afraid of the idea of learning with technology and social media since they are frequently exposed to both in other parts of their lives. This is evidenced by a striking feature of the 21st century law student; their propensity to bring an array of digital technology into the lecture theatre. Oliver and Goerke have described this phenomenon as the 'digital backpack',[19] typically equipped with web-enabled handheld or laptop devices. At Queensland University of Technology, Faculty of Law, students across all demographics are increasingly making use of mobile devices in face-to-face learning experiences such as lectures and tutorials. Such is the saturation of use of personal mobile technology, there appears to be no demographic commonality among the conscientious objectors who remain device free in face-to-face classes.

It would be mistaken to believe that all students who come to the lecture theatre clutching high tech devices have an intrinsically deep knowledge of how best to utilise technology in their learning.[20] Similarly, it is unlikely that they are all instinctively skilled to an extent where they do not need support or guidance in the use of technology in teaching and learning. Given the nature of increasingly diverse cohorts and their demonstrated enthusiasm for technology, it is becoming more necessary for legal educators to continuously and regularly sample the technological demographics of their cohort, and update their approaches to teaching.

Advancements in wireless and mobile internet technologies underpin and facilitate the connectedness and capacity of 21st century students to always be

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Learning', (2008) 3 *Emerging technologies for learning* 11; Scott Crittenden, 'Silicon Daydreams: Digital Pastimes of the Wired Generation', (2002) VI (2) *Virginia.edu,* <http://www.itc.virginia.edu/virginia.edu/fall02/daydreams/home.html>.

[14] Prensky, above n 13.

[15] Ibid.

[16] Oblinger and Oblinger, 'Is it Age or IT', above n 13, [2.9].

[17] Ibid [2.2].

[18] Ibid [2.1].

[19] Beverley Oliver and Veronica Goerke, 'Australian undergraduates' use and ownership of emerging technologies: Implications and opportunities for creating engaging learning experiences for the Net Generation' (2007) 23 *Australasian Journal of Educational Technology* 171, 172.

[20] Gregor E Kennedy et al, 'First year Students' experiences with technology: Are they really digital natives?' (2008) 24 *Australasian Journal of Educational Technology* 108, 109.

'on'.[21]   These observations are transferable to law students.   The continuous connectedness that these technologies perpetuate is demonstrated via the high powered, mobile devices that students bring to face-to-face learning environments.   These mobile devices have become the elephant in the room, begging the question: to what extent are mobile devices distracting students from their learning?

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B   Distraction

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Students may bring their laptops and mobile devices to lectures to assist with efficient note-taking or to facilitate online access to class materials during the lecture.   Through their attendance and aforethought, these students are demonstrating an enthusiasm for their learning and a preparedness to be actively engaged in the experience.   However, and perhaps paradoxically, laptops and other wireless internet enabled devices mean that the internet, and a cascade of open windows, puts an arsenal of distraction at the fingertips of the learner. Mobile devices enable multitasking and switching between not only the lecture and the presentation slides, but also a cornucopia of unrelated distractions such as *You Tube*, *Facebook*, *Twitter*, sports updates, email and the like.   This distraction is obviously detracting from learning to some extent, but also reveals what is potentially a failing in pedagogy in the new learning environment.

In a Kansas State University ethnographic project, *Visions of Students Today*, students reveal the extent of their dissatisfaction and dis-engagement with traditional teaching methods.[22]   One student reveals 'I am on Facebook about 4 of the 8 hours that I am in class.'[23]   Prensky's observations of digital natives attempts to explain such behaviour as typical of a generation 'accustomed to the twitch-speed, multitasking, random-access, graphics-first, active, connected, fun, fantasy, quick-payoff world of their video games, MTV, and Internet [students] are *bored* by most of today's education, well-meaning as it may be.'[24]   Oblinger and Oblinger concur, asserting that the Net Gen will simply tune out if the class is not engaging or is too slow.[25]   Yet these observations ring true of most learners in such a learning environment, irrespective of generation and no matter how diverse the cohort.   The relationship between passive learning experiences and student distraction appears disturbingly inversely proportional: the more passive the learning experience, the greater the capacity for students to be actively distracted by their mobile devices.

The student-user is not the only person potentially distracted by the action on their laptop screen.   Associate Professor of Humanities at University of Colorado, Dianne E. Sieber has described the reaction as a 'cone of distraction' which extends the distraction parabolically to those behind and around the student

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[21]   Jenny Millea, Ian Green and Garry Putland, *Emerging technologies: A framework for thinking* (education.au limited, 2005) <http://www.det.act.gov.au/__data/assets/pdf_file/0010/74485/ACT_EmTech_Report_v1_2.pdf>.

[22]   *Visions of students today* (Directed by Michael Wesch, The Digital Ethnography Working Group, Kansas State University, 2011) <http://mediatedcultures.net/ksudigg/>.

[23]   Ibid 00:03:17.

[24]   Prensky, above n 13, (emphasis in original).

[25]   Oblinger and Oblinger, above n 13, [2.6]-[2.7].

viewing the laptop.[26]   From the writer's own experiences of viewing student behaviour in lectures requiring only very passive levels of student engagement restricted to listening and note-taking, the cone of distraction is viral; those other students seem to become infected with the need to check their own *Facebook* status or twitterverse for activity. All of this behaviour distracts the students from the lecture materials and makes one wonder why they would bother to attend. If the lecturer's only goal for student engagement is for students to listen and perhaps take notes, and where the teaching approach has no higher demand for student attention, then distraction is a paramount concern whether that distraction is digital or not. The proliferation of mobile devices and their potential to distract students from their learning raises serious barriers to learning. The question that arises is: how should the lecturer manage the distraction?

C   Managing Distraction: Lessons from the Attention Economy

The impulse to ban laptops from lecture theatres is understandable given the extent of the distraction they facilitate.[27] A professor of geosciences at Princeton University reportedly banned laptops from his lectures after it was revealed that students were playing online poker during lectures.[28] A lecturer from University of Oklahoma was broadcast on *You Tube* destroying a student's laptop with liquid nitrogen mid-lecture to dramatically make his point: laptops were not welcome in his lectures.[29]

The challenge faced by legal educators seeking to actively engage students in their learning is to recognise that they are in the market for the attention of their students at every point in the learning process. Distraction is a real threat to undermining student engagement, and is most acute in classes requiring only passive engagement. Whether or not mobile technology is banned from the lecture theatre, students may still 'tune out' unless the lecturer skilfully captures their attention. Today's society is characterised by an overflow of information and stimuli. 21st century learners are well practiced in making decisions regarding where, when and how they choose to devote their attention.

Maintaining attention and distraction are not new barriers to learning; the novelty here is the teaching and learning of law in an environment where so many technological distractions beyond the control of the lecturer are potentially present. Such a teaching and learning environment bares many of the hallmarks of an attention economy. When the issues raised by the teaching of law in a digital environment featuring risks of distraction are considered through the paradigm of the attention economy, insights can be gained as to how pedagogical practices can be reconsidered to achieve more effective learning outcomes.

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[26] Daniel de Vise, 'Wide Web of diversions gets laptops evicted from lecture halls' (9 March 2010) *Washington Post*
<http://www.washingtonpost.com/wp-dyn/content/article/2010/03/08/AR2010030804915.html>.

[27] Ibid; Al Tompkins, 'Profs should rethink Banning Laptops from Lecture Halls' (10 March 2010)   *Poynter*   <http://www.poynter.org/latest-news/als-morning-meeting/101319/profs-should-rethink-banning-laptops-from-lecture-halls/>;   James Bone, 'American Lecturers Banning   laptops   from   the   classroom'   (11   March   2010)   *Times   Online* <http://www.timesonline.co.uk/tol/news/world/us_and_americas/article7057511.ece>.

[28] Bone, above n 27.

[29] *You Tube* <http://www.youtube.com/watch?v=rK8B_7n1IdM>; Bone, above n 27.

The 'attention economy' was postulated by Nobel prize winning economist, Herbert Simon in 1971:

> [I]n an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.[30]

The term 'attention economy' has been primarily associated with the economics relevant to e-commerce where economies are based on business, profits, and market-share.[31] In these economies, attention is a scarce resource. Attention is paramount to student engagement in their learning. Knowledge about attention, capturing and maintaining attention, and managing distraction is of significant value; the question is to what extent this is relevant to learning and the design of effective learning experiences? Goldhaber has described attention economics as 'the study of how best to deploy and structure attention to the greatest effect.'[32] In a legal education context, the benefit of gaining and retaining student attention to the greatest effect is that it opens up increased possibilities for effective teaching and learning directed at student engagement.

Already, solutions to these issues are manifesting themselves in a university research environment. Lanham's study of the response of libraries to information technology, which was developed in the context of the principles of the attention economy paradigm, focuses on facilitating attention by developing frameworks designed to assist with the flood of data/information.[33] This was accomplished by transforming the information so as to enable the user to engage with it in the way most beneficial to them.[34] The key to Lanham's design framework was to encourage the user to approach the information in a particular way or to frame the information so as to make it compelling and interesting to the user.[35]

When student engagement is viewed through the lens of attention economics, the answer to the critical pedagogical question of how lecturers should best manage distraction, is to deploy and structure attention in learning activities designed for effective learning. These factors can be addressed at the coalface of teaching and learning in legal education by selecting teaching methods with an acute awareness of the risk of distraction, particularly distraction from students' mobile devices. The solution may lie in using the technology to distract the students back into the lecture theatre through carefully designed blended learning experiences scaffolded to best capture and maintain student attention. Blended learning technologies can

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[30] Herbert Simon, 'Designing Organizations for an Information-Rich World', in Martin Greenberger (ed), *Computers, Communication, and the Public Interest,* (Johns Hopkins, 1971) 40, 42.

[31] See Thomas Davenport and John C. Beck. *The Attention Economy: Understanding the New Currency of Business.* Harvard Business Press, 2001.

[32] Michael Goldhaber, 'The value of openness in an attention economy' (2006) 11 (6) *First Monday* <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1334/1254>.

[33] Richard Lanham, *The Economics of Attention: style and substance in the age of information* (Universtiy of Chicago, 2006) 6.

[34] Ibid.

[35] Ibid.

scaffold a range of activities that may appeal to a range teaching and learning styles. The paramount concern remains effective teaching and learning.

D   Using technological innovation to address barriers to learning and encourage effective teaching towards student engagement

The use of a variety of emerging technologies to foster student engagement and direct and deploy student attention is consistent with accepted theory of effective teaching and learning.[36] It seeks to support a range of learners with different learning styles and, similarly scaffolds a range of different teaching methods and preferences. Best practice would typically also involve a strong presence of the teacher who uses the features of the technology to interactively gauge student understanding and dynamically scaffold the learning experience in response to that feedback.[37]

Scaffolding student engagement through technology could provide support where it is most needed and change and adapt over the years of the students' bachelor degree. For example first year students may benefit most from intensive, highly structured, face-to-face learning experiences; in the middle years activities should be scaffolded to promote and encourage students becoming more independent in their learning, more skilled in articulating questions, and constructing arguments, more adept at collaboration and more confident in inquiring as to the state of the law and challenging the assumptions upon which the law is predicated. This scaffolded process could culminate in independent final year students skilled at self-paced learning activities and taking greater personal responsibility for their progress. At each stage a strong instructor presence as the facilitator of the learning activity is important and demonstrates academic preparedness to take responsibility for overseeing the process of supporting students in becoming skilled, knowledgeable, adaptive learners.   This approach targets student engagement; students are more likely to feel connected to the instructor and other students in the course as well as to the content being studied.[38]

Blended learning technologies can scaffold a range of activities that may appeal to a range teaching and learning styles. Social media such as *Facebook* and *Twitter* are being used in teaching and learning in higher education.   Further, commercially developed educational technology is increasingly making its way into this space;[39] *Socrative* and *Go Soapbox* are two examples. The siren call to use technology in teaching is becoming increasingly difficult to ignore. Yet the focus must remain on effective pedagogy. To simply embrace technology without considering the required educational outcomes would be, at best, to put the cart before the horse, and at worst pointless. A more authentic process is for

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[36] Ramsden, above n 3; Biggs and Tang, above n 3; Gibbs and Habeshaw, above n 3; Mary Keyes and Richard Johnstone, 'Changing Legal Education: Rhetoric, Reality, and Prospects for the Future' (2004) 26(4) *Sydney Law Review* 537; Richard Johnstone, 'Rethinking the Teaching of Law' (1992) 3 *Legal Education Review* 16.

[37] Dixson, above n 4, citing Suzanne Young, 'Student views of effective online teaching in higher education' (2006) 20(2*) The American Journal of Distance Education* 65.

[38] Dixson, above n 4.

[39] Gosoapbox < http://gosoapbox.com/>; Socrative < http://www.socrative.com/>.

academics and educational designers to lead the process to innovate, test, trial,[40] and reflect as action researchers,[41] and not simply respond to uses possible to technologies developed without education in mind. Such an authentic process has been taken in the two blended learning initiatives considered here. These initiatives have coupled face-to-face learning with a use of technology seeking to create blended learning opportunities for greater student engagement.

At Sor-Trondelag University College, Norway ('HiST'), trials have begun in the use of a Wi-Fi accessed network based student response system accessed via the students' own *iPod*, *iTouch* or web-enabled touch screen device capable of reading HTML.[42] The pilot of this project was undertaken with undergraduate engineering and technology students. HiST has been designed to assist with 'maintaining order and discipline' in large group face-to-face teaching and learning through structuring activities and discussion.[43] HiST's adoption of a platform using the student's own devices is based on analysis demonstrating that the high quality of the technology students are bringing with them to face-to-face learning is not only cheaper to use, but also addresses some of the institutional costs involved in investing in commercial clicker systems.[44]

Queensland University of Technology ('QUT') has developed the Open Web Lecture (OWL) an internet-based student response application. This blended learning application 'seamlessly integrate[s] a virtual learning environment within the physical learning space'.[45] Taking advantage of the students' own mobile technology, this technology enables real time collaboration between the lecturer, student and other students connecting to the application via the university's Wi-Fi network via students' own internet-enabled laptops, tablets or mobile phones. The pilot of this project was undertaken with undergraduate students in the faculties of Science and Engineering, Law, and Education. The key features of this application enable a web mediated student-lecturer, peer-peer feedback loop where the virtual environment informs and influences the face-to-face instruction. The OWL application combines features of student response systems with many of the live collaborative features offered by social networking platforms. During the face-to-face lecture, the lecturer and students can take advantage of the features of the application to post questions and comments, and answer, reply to or 'like' the questions or comments posted by others. Polls can be conducted and the results immediately displayed graphically for students to analyse and discuss.

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[40] Diana Laurillard, 'Technology enhanced learning as a tool for pedagogical innovation' (2008) 42 (3-4) *Journal of Philosophy of Education* 522.

[41] Diana Laurillard, 'The teacher as action researcher: Using technology to capture pedagogic form' (2008) 33 (2) *Studies in Higher Education* 139.

[42] John Stav et al, 'Experiences obtained with integration of student response systems for iPod touch and iPhone into e-Learning environments' (2010) 8 (2) *Electronic Journal of e-Learning* 179.

[43] Ibid 181.

[44] Ibid 181.

[45] Richard Evans and Anne Matthew, 'Please leave your mobile phone on: Social educational networking in a social society: Encouraging in-class engagement at QUT across physical and virtual learning environments', (CCA Educause Australiasia, Sydney, 3-6 April 2011) <http://ocs.arcs.org.au/index.php/educause/ccae2011/paper/view/329>; Richard Evans and Anne Matthew, 'Stop lecturing me, I want to learn' (Paper presented at Ascilite, Hobart, 4-7 December) <http://www.leishmann-associates.com.au/ascilite2011/proceedings.php>.

Many of these features instinctively appeal to student users of social networking media, yet avail the academic of control within the University network. Student privacy is respected through a system of preserving peer-peer anonymity, a functionality that seeks to address a traditional reluctance to speak up in large classes.[46]

This technology has been put to use in a range of teaching and learning experiences to create a carefully scaffolded learning opportunities encouraging communication and collaboration even within traditionally passive learning environment. One example will be given to demonstrate the possible teaching and learning experiences that present themselves in a large undergraduate corporate law lecture on the topic of corporate constitutions, where typically the focus of the lecture is content delivery covering a multitude of complex statutory provisions and case law.

Under a traditional teaching and learning approach, where independent learning has not been scaffolded and standard passive content delivery is deployed, the lecturer may explain the underlying statutory requirements and relevance of a corporate constitution. Students may be assigned readings of key cases and chapters from the text. These readings are unlikely to be undertaken before the lecture. Neither the caselaw nor the statutory provisions engender much student enthusiasm or interest in and of themselves. The difficulty with this traditional approach is that there is very little, if any, active learning involved. Worse still, the more information presented, the quieter and more passive students appear to become. There is little to 'motivate learners to engage in understanding',[47] since the learning activity is focused on the law lecturer communicating knowledge of the topic.

This 'stand and deliver' approach to lecturing is not desirable since it encourages only very passive learning behaviours such as listening and note-taking. It offers minimal opportunity for student engagement with the lecture materials. In such a learning environment the potential for student distraction, digital or otherwise is rife. Learning is a profoundly social experience, yet such a learning environment actively negates this. If the extent of the lecturer's adoption of technology is a text rich PowerPoint presentation consuming large bright screens in a slightly darkened amphitheatre style lecture theatre, then student engagement is unlikely and students may 'tune out' to the spoken word in order to focus on the PowerPoint presentation. Research has established this phenomenon as a dysfunctional allocation of attention: students are inclined to focus intently on the slides and suppress the spoken lecture in order to maintain that focus.[48]

The traditional corporate law learning experience often involves content delivery afforded via lectures complimented by a tutorial program. The focus of the tutorial may be an opportunity for students to check their understanding of the lectured material and associated readings based on their explanations to a problem scenario involving a theoretical company's constitution. The extent to which this

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[46] Evans and Matthew, 'Please leave your mobile phone on', above n 45.
[47] Diana Laurillard, 'The pedagogical challenges to collaborative technologies' (2009) 4 *Computer-Supported Collaborative Learning* 5, 14.
[48] Christopher Wecker 'Slide presentations as speech suppressors: When and why learners miss oral information' (2012) 59 *Computers and Education* 260, 267-271.

tutorial activity succeeds in this hinges upon whether the student has attempted to prepare an answer to the question. Where participation in the tutorial is assessed, the competition among students to contribute may unfortunately see the individual student's experience amount to predominantly listening and note taking with perhaps one or two individual contributions.

If the learning experience is reconsidered with a clear focus on accepted principles of effective teaching and learning, the primary concern becomes how to make the learning experience a more engaging, active learning experience. To what extent is this possible if the lecture is still to be used for content delivery? Appropriate use of technology can afford a more enhanced teaching and learning construct.

In this new construct students in the face-to-face learning environment of the lecture theatre can be encouraged to go online via their own internet-enabled devices to access a particular company's constitution, and then to read and consider it in small groups formed with the students sitting immediately next to them. Similarly, they can also be asked to access legislation or one of the relevant cases online. Student reading and discussion can be guided by a quiz uploaded to their mobile devices to identify the key provisions of the constitution and their relevance to the statutory provisions from the initial debrief. In this approach, technology can be used to provide a framework within which students can process the lectured material. Students can upload their answers to the quiz and immediately see the results in graphic form. This can be used to provide feedback to the students on their understanding of the topic as well as to afford them the opportunity to see how their peers answered the quiz.

OWL adopts many of the features of social networking technology in an educational technology construct: it allows students to set their own quiz questions to challenge other students or to answer challenges from other groups of students. They can 'like' or respond to other student's posts. The quiz results and collaborative online discussion can be used by the lecturer to inform and direct the next step taken in the lecture. The lecturer's role is transformed. In this teaching and learning environment, the lecturer's primary role is to be responsive to the students' learning needs. This will involve responding to what he or she identifies as gaps which have been revealed in the students' understanding of the area. At the conclusion of the lecture a record of the online conversational learning is uploaded to the unit's website for the benefit of students not able to attend and for revision.[49]

This new construct allows for a richer, authentic learning experience where students are shown the practical and theoretical relevance of the material and are 'encouraged and enabled to engage repeatedly in the goal-action-feedback-reflection-adaption-revision cycle.'[50] The lecturer is able to 'motivate the iterative exchange of ideas' and students 'have an increased sense of ownership of the whole' learning experience since 'their own contributions clearly playing a

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[49] The above example is based directly on the Author's own recent approach to the teaching of undergraduate corporate law in large lectures.

[50] Laurillard, *The pedagogical challenges*, above n 47, 14.

role in the synthesis of ideas.'[51] The critical point is that the technology is not the driver of the learning approach.

The starting point is determining a teaching and learning approach directed at effective teaching and learning; this is considered in Part IV. Consideration can then be given to whether technology can enhance the pedagogical approach. In the example above, OWL was chosen as the technological platform to support the chosen teaching and learning approach after consideration of a range of technologies all of which would have involved deployment of the students' mobile devices in the learning activities. Both *Twitter* and *Facebook* facilitate near instantaneous micro blogging features, while raising new challenges in directing conversational threads. Neither readily facilitates polling. *Facebook* offers extensive opportunity for collaboration but opens a Pandora's box of privacy issues associated with keeping personal/work/study discrete. Commercial applications generally, even those that are developed as education specific technologies, raise concerns associated with a loss of institutional control over student use. The extent to which web based technology such as OWL affords effective teaching and learning is considered in Part V.

IV   EFFECTIVE TEACHING AND LEARNING FOR THE 21ST CENTURY LAW STUDENT IN A QUALITY ASSURANCE LANDSCAPE

Regardless of the plethora of technologies at the disposal of legal educators today, pedagogic priority remains effective teaching and learning. Extensive research establishes as a truism that teaching and learning is most likely to be effective when students are actively engaged in their learning.[52] In an effective teaching and learning matrix, formulating engaging teaching practices must take into account the nature of the 21st century learner and their attitudes to learning, and should explore pedagogies, environments, and techniques that are supportive of learning goals. Effective teaching is of critical importance and 'require[s] an ongoing evaluation by the teacher of the effect of the teaching on the learning of students, and modifying the teaching in light of the information collected'.[53] This may necessitate adapting the teaching and learning environment to meet the learners' needs and then reflection upon the teaching and learning experiences and outcomes 'in order to improve either the task practice or … articulation of the theory or concept'.[54]

It has been argued here that student distraction emanating from use of mobile devices in face-to-face learning is a barrier to learning for the 21st century law student. Rapid technological change and the affordances it offers for engaging face-to-face learning are critical considerations in a re-evaluation of pedagogy

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[51]   Ibid.
[52]   Ramsden, above n 3; Biggs and Tang, above n 3; Gibbs and Habeshaw, above n 3; Keyes and Johnstone, above n 36; Johnstone, above n 36.
[53]   Johnstone, above n 36, 29 citing Paul Ramsden and Agnes Dodds, *Improving teaching and courses: A guide to evaluation* (University of Melbourne: Centre for the Study of Higher Education, 1989); Richard Johnstone, 'Evaluating law teaching: Towards the improvement of teaching or performance Assessment (1990) 2 *Legal Education Review* 101; Paul Ramsden, 'Evaluating and improving teaching in higher education (1990-91) 2 *Legal Education Review* 149, 150; see also Laurillard, *The pedagogical challenges*, above n 47, 8.
[54]   Laurillard, *The pedagogical challenges*, above n 47, 8.

focused on effective teaching and learning approaches that address barriers to learning. Such re-evaluation of 21st century pedagogy takes place within a quality assurance landscape. This adds further complexity, while demonstrating the wider relevance of the affordances technology offers in effective teaching and learning.

Legal education across the globe now embraces skill development and graduate capabilities as integral to law school curriculum. The focus is on producing students who are knowledgeable and capable with adaptable, transferable skills. If legal education is to retain authenticity in its approach of equipping undergraduates with the skills necessary for them to become 'adaptive learners',[55] well placed to learn in new environments such as those into which they will emerge as new practitioners of law, then the universities equipping them with those adaptive skills ought also demonstrate commitment to adaptive learning themselves by engaging in reflective and adaptive practice in rethinking pedagogy in changing learning environments. This will involve commitment at both an institutional level and at the coalface of teaching and learning.

There are opportunities here for learning design to address more recent priorities introduced into the higher education landscape. Government initiatives seeking to address standards and quality assurance in higher education have seen the establishment of the Tertiary Education Quality and Standards Agency (TEQSA). TEQSA is responsible for the development of a quality assurance framework in higher education. The scaffolding of the framework is discipline specific academic standards.

The Learning and Teaching Academic Standards (LTAS) project[56] was tasked with the development of discipline specific academic standards, including those for the Bachelor of Laws. Six Threshold Learning Outcomes (TLOs) for the Bachelor of Laws were established representing what graduates are 'expected to know, understand and be able to do as a result of learning'.[57] The TLOs have as their central focus knowledge, ethics and professional responsibility, thinking skills, research skills and communication and collaboration.

TLO 5 – Communication and Collaboration states that law graduates 'will be able to (a) communicate in ways that are effective, appropriate and persuasive for legal and non-legal audiences, and (b) collaborate effectively'.[58] The TLOs have been endorsed by the Council of Australian Law Deans as representing 'an appropriate statement of the threshold learning outcomes that are required of Bachelor of Law graduates from any Australian university'.[59] The TLOs are accompanied by non-

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[55]   Stanford University, *The Study of Undergraduate Education at Stanford University,* 2012 < http://www.stanford.edu/dept/undergrad/sues/>.

[56]   Sally Kift, Mark Israel and Rachael Field, *Bachelor of Laws, Learning and Teaching Academic Standards Statement*, December 2010, Learning and Teaching Academic Standards project, Australian Learning and Teaching Council, Department of Education, Employment and Workplace Relations, Strawberry Hills.

[57]   Ibid 1.

[58]   Ibid 10.

[59]   Ibid 7.

prescriptive[60] notes (Notes) offering guidance as to how the TLOs may be interpreted.

The TLO 5 Notes define 'communicate' to include oral and written communication[61] and appropriate communication as addressing 'the audience's needs and the communication context.'[62] 'Effective, appropriate and persuasive' communication is said 'to go beyond the mere transmission of information to a passive recipient but requires a graduate to be able to listen to, engage with and understand the needs of their audiences.'[63] The TLO 5 Notes recognise that 'technology is part of the mix of choices as to the means or mechanism of communication' and acknowledges that benchmark statements for law developed by the United Kingdom Quality Assurance Agency (QAA) have identified that 'many students are now proficient in such skills before they arrive at university'.[64] TLO 5 casts a wide net for 'collaborating effectively' extending beyond teamwork to 'working in groups and working collaboratively with others'.[65] The Notes include enthusiastic statements in support of TLO 5 from stakeholders consulted in the process of developing the TLOs:[66]

Through the LTAS consultation process, many members of the profession have emphasised these skills as critical to the modern legal workplace.

> Delighted to see collaboration with others! This is routinely difficult to develop, and we know that it leads to success professionally.
>
> Member of Large Law Firm, response to D3.1 TLO 5, 26 October 2010
>
> Graduates have to work in teams all the time. In small firms the team is sometimes just you and the principal. In this situation you need non-adversarial communication techniques to cope if you want to do things differently from the way they do them.
>
> Postgraduate Student and Legal Practitioner, response to D3.1 TLO 5,
> 15 August 2010

There are opportunities here to harness technology as a platform for enabling interaction directed at the synergies that result from fluid real time collaboration. Technology can enhance and enable learning activities that support students in developing the skills targeted in TLO 5 by supporting them in learning how to formulate questions, building student confidence in asking questions, formulating appropriate responses, being supportive of other students as they develop skills and confidence in learning the same, and learning throughout the whole process about the synergy that comes with successful collaboration. The micro blogging and 'like' features of social media and ideation tools are particularly supportive of this approach.

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[60] Ibid 10.
[61] Ibid 21.
[62] Ibid.
[63] Ibid.
[64] Ibid; United Kingdom Quality Assurance Agency, Subject Benchmark Statement: Law (2007) <http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/law07.asp>.
[65] Kift, Israel and Field, above n 56, 22.
[66] Ibid.

Technology should not be adopted in teaching without a strong pedagogical basis for its use: technology should not be used for technology's sake.[67] Such an approach lacks authenticity; students are unlikely to see the point and less likely to engage in such learning activities. This is true of teaching methods generally; as Johnstone explained in the context of exploring the different teaching methods at the disposal of law teachers in 1992, well before the technological avalanche that began with the Internet and the World Wide Web:

> These methods should not be used as ends in themselves, but only with clear purposes which should be communicated to the class. If students do not appreciate why they are using a particular method, they may resist its use.[68]

A considered approach is to re-evaluate existing pedagogy in light of new barriers to learning, and to pursue innovation only if it has the potential to address these barriers to learning, benefit the teaching and learning process and, in a legal education context, keep a firm eye on the Bachelor of Laws TLOs. Such an approach is more likely to result in design for more effective and innovative teaching and learning experiences, even in traditionally disconnected learning environments. Any re-evaluation of traditional pedagogy should be premised upon well-evidenced pedagogic theory, awareness of the stakeholders within the learning framework and the learning environment. Technology enters into consideration to the extent of its affordances for student engagement by facilitating connectedness, communication and collaboration, in a structured learning experience designed to manage distraction and capture attention.

Siemens has suggested that existing learning theories are limited by the central tenet that 'learning occurs inside a person' and fail to take account of learning that occurs outside of people or through organisational knowledge. Siemens has suggested a new learning theory – connectivism - in which knowledge can be 'actionable' in the sense that knowledge is stored, for example on databases, and then manipulated through the use of technology.[69] As such, the bedrock of connectivism is the connections of interplay between learners, teachers and information that enable learning. Siemens suggests that connectivism is better placed to account for the learning that happens in a networked environment saturated with information.[70]

Laurillard's conversational framework[71] also accommodates connectedness as a necessary part of the dialogic nature of the framework requiring 'repeated iterative interaction'.[72] Existing learning frameworks can benefit from technologies that embrace and enable similarly dialogic connectedness.[73]

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[67] Diana Laurillard, Digital technologies and their role in achieving our ambitions for education (Institute of Education, University of London, 2008), 5.

[68] Johnstone, above n 36, 58.

[69] George Siemens, Connectivism: A learning theory for the digital age (12 December 2004) elearnspace <http://www.elearnspace.org/Articles/connectivism.htm>.

[70] Ibid.

[71] Diana Laurillard, Rethinking university teaching: A conversational framework for the effective use of learning technologies (Routledge, 2nd ed, 2002).

[72] Laurillard, The pedagogical challenges, above n 47, 8.

[73] Ibid.

Teaching has become a design science in which technology can facilitate effective learning.[74] The possibilities for learning afforded by students' own mobile devices and other emerging technological innovation are far broader than merely offering another platform for traditional communication techniques already used in learning and lecturing in law; using technology as just a more flexible platform for traditional content delivery is simply 'using the digital to emulate the conventional'.[75] While websites and podcasts may add value, they are also still largely passive learning experiences; '[t]he additional value they offer is logistic rather than pedagogic: They offer more flexible study.'[76] Yet innovative technologies can be exploited to enhance learning by exploiting the features of the technology to shift the focus of the learning activities from 'teacher-focused to learner-focused activities',[77] as an essential part of the 'the continual iteration between theory and practice, learner and learner, and learner and teacher.'[78]

> We need to think in terms of transforming the educational experience so that it is meaningful to the information-age learner. … [T]he challenge will be for educators and higher education institutions to incorporate the information age mindset of today's learners into our programs so as to create communities of lifelong learners.[79]

This article has suggested that harnessing the appeal of social media in a learning environment, deploys collaborative learning strategies offering opportunities for greater communication, collaboration and interaction in learning. Such an approach to learning design is steeped in appropriate theory supporting active, effective learning. It has been contended that learning experiences constructed for multi-modal collaboration motivate quality learning in a way that is more powerful than 'a partial contribution to a class discussion.'[80] Use of technology in this way gives rise to possibilities to transform and enhance the learner's learning experience: '[t]he introduction of the digital technology enables the teacher to design at the level of much more precise learning iterations.'[81] These considerations may also inform the better design of learning experiences to encourage engagement of online students, whose current experiences with learning technologies may be restricted to listening to podcasts. Technology rich learning spaces[82] facilitate opportunities for live involvement of external audiences in the face-to-face learning. Such approaches address barriers to learning including isolation of the remote student and can inform learning design for more engaging effective learning even among the remote audience.

Even in traditional law lecture theatres the technological possibilities afforded by students' own mobile devices may well unlock the key to effective learning in an

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[74] Diana Laurillard, Teaching as a Design Science: Building Pedagogical Patterns for Learning Technology (Routledge, 2012).

[75] Laurillard, The pedagogical challenges, above n 47, 15.

[76] Ibid 12.

[77] Ibid 15.

[78] Ibid.

[79] Jason L Frand, 'The Information Age Mindset: Changes in students and implications for Higher Education. (2000) September/October Educause Review 15 , 22.

[80] Ibid 15.

[81] Laurillard, The pedagogical challenges, above n 47, 15.

[82] Evans and Matthew, 'Should we still lecture?' above n 12; Evans and Matthew, 'Stop lecturing me, I want to learn', above n 45.

attention economy. While it may be convenient to think of mobile devices as part of the problem, the better approach is to look at it as integral to the solution of facilitating engaging learning experiences.

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V   EVALUATION: TO WHAT EXTENT DO THESE TECHNOLOGIES
SUCCESSFULLY FACILITATE ENGAGEMENT

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Further research is required exploring the extent to which technologies such as those explored in this article facilitate engagement. Web based technologies that are specifically designed for educational use, are based on extensive research demonstrating the pedagogical effectiveness of clicker systems.   There is a preponderance of academic literature on blended learning reporting on the impact on learning of lecturing to large groups with student response systems (SRS), also known as clickers.[83] This research supports teaching and learning approaches using clickers to transform the traditional large lecture from an impersonal, passive, anonymous learning environment into a personal, active and responsible one.[84]   In these studies, clickers were found to have contributed to effective, active learning,[85] increased student engagement,[86]increased interest in unit materials,[87] fostering critical thinking skills,[88] improved understanding of content,[89] positively influencing learning outcomes and exam performance.[90]

Teaching with clicker technology affords opportunities for interaction, and scaffolded solutions to encouraging more extensive communication through student contribution of questions, ideas and comments giving the lecturer an immediate opportunity to assess understanding and provide meaningful feedback to students in the learning environment.[91]   It is this clicker enabled scaffolding that Wieman and Perkins attribute as the key driver of the positive impact of clickers on student engagement.[92]   Hoekstra's ethnographic study concluded that clickers not only contributed to making the learning environment 'feel more

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[83]   Ralph Preszler et al, 'Assessment of the effects of student response systems on student learning and attitudes over a broad range of biology courses' (2007) 6 *Life Sciences Education* 29; April R Trees and Michele H Jackson, 'The learning environment in clicker classrooms: student processes of learning and involvement in large university-level courses using student response systems' (2007) 32 *Learning Media and Technology* 21, 24. See also Angel Hoekstra, 'Vibrant student voices: exploring effects of the use of clickers in large college courses' (2008) *Learning Media and Technology* 329, 333; Michael Salemi, 'Clickenomics: Using a classroom response system to increase student engagement in a large-enrollment principles of economics course' (2009) *Journal of Economic Education* 385; Ava G Porter and Stuart Tousman, 'Evaluating the effect of interactive audience student response systems on the perceived learning experiences of nursing students' (2010) 49 *Journal of Nursing Education* 523; Susan Hunter Revell and Mary McCurry, 'Engaging millennial learners: Effectiveness of personal response system technology with nursing students in small and large classrooms' (2010) 49(5) *Journal of Nursing Education* 272, 274.
[84]   Trees and Jackson, above n 83; Hoekstra, above n 83.
[85]   Trees and Jackson, above n 83; Hoekstra, above n 83, Prezler et al, above n 83.
[86]   Carl Wieman and Katherine Perkins, 'Transforming Physics Education' (2005) 58 *Physics Today* 36, 42; Hunter Revell and McCurry, above n 83, 274.
[87]   Prezler et al, above n 83.
[88]   Hunter Revell and McCurry, above n 83, 274.
[89]   Prezler et al, above n 83.
[90]   Ibid; Hunter Revell and McCurry, above n 83, 274.
[91]   Trees and Jackson, above n 83, 24. These findings are consistent with Hoekstra, above n 83, 339.
[92]   Wieman and Perkins, above n 86, 42.

active and engaging', but also helped students to manage distraction, 'develop conceptual knowledge, work with discipline specific terminology, practice critical thinking, and cultivate peer relationships beneficial to the learning process', and afforded opportunities for alleviating boredom in lectures.[93]

While the success of student response systems in promoting effective teaching and learning towards greater student engagement is encouraging, these systems do not make full use of technological innovation where they are based on a largely one-way digital communication medium, and further, they do not necessarily address barriers to learning such as distractions from students' own internet enabled mobile devices. Current innovation in learning design has the potential to move beyond clicker technologies to a new level of active blended learning experiences by incorporating many of the features of social networking technologies. These technologies enable teaching to harness the real time connectivism facilitated by internet enabled social networking technology.

To the extent that HiST and OWL use students own devices in the face-to-face learning activities, these uses of technology in teaching offer the lecturer opportunities to scaffold learning activities in a way that will provide the students a framework for information/unit content. Using the students' own devices for interactivity related to the lecture must also limit the extent to which the device remains available to distract the student via the inevitable array of distraction of which the device is otherwise capable. The HiST study reported that students found the technology effective in their learning, made attending lectures more enjoyable and were in favour of the technology being deployed in every lecture.[94] Students expressed reservations as to time-efficient usage of the technology.[95] The evaluation of the effectiveness of the technology included acknowledgement of occasional technical problems associated with network access and the technological infrastructure of the lecture theatre.[96] Preliminary evaluations of the OWL pilot have been similarly positive, indicating strong, statistically significant, positive student support for the proposition that lectures with OWL were engaging.[97] Student responses across the three participating faculties generally featured low levels of negative feedback, which was most usually associated with connectivity issues or an individual lecturer's use of the technology.[98]

Institutional commitment to blended learning initiatives supports academics choosing to engage with technology that enhances teaching and learning approaches targeted at effective teaching and learning.[99] Institutionally owned applications, as opposed to applications used by the university under commercial

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[93] Hoesktra, above n 83, 335; See also Salemi, above n 83; Porter and Tousman, above n 83; Hunter Revell and McCurry, above n 83, 274.

[94] Stav et al, above n 42, 188.

[95] Ibid.

[96] Ibid 189.

[97] Evans and Matthew, *Should we still lecture*' above n 12; Evans and Matthew, *Stop lecturing me, I want to learn*, above n 45.

[98] Evans and Matthew, *Stop lecturing me, I want to learn*, above n 45; Evans and Matthew, *Should we still lecture?* above n 12.

[99] For example, Queensland University of Technology, *Manual of Policy and Procedures,* C/4.2. <http://www.mopp.qut.edu.au/C/C_04_02.jsp>.

license, address many of the concerns with risks associated with the loss of institutional and academic control inherent in the adoption of on-line commercial social networking applications in university teaching. While commercial social networking sites offer effective and popular means of facilitating communication, there is no guarantee that student users will adhere to their university's internet use agreement. There is little doubt that universities seeking to minimise potential risks associated with offensive or potentially defamatory postings, would prefer to have the capacity to take down information.[100] This is an important consideration at the institutional level. Davies and Lee warn that virtual education involving engagement with social networking technologies will increasingly have to cope with the potential for malevolent or inappropriate user behaviour as the 'virtual education world' expands.[101] Where the technology chosen is beyond the university's control, particular issues arise as to best practice in student and staff use. QUT has developed *Social Media Guidelines for Learning and Teaching* to specifically cover best practice in educational use of commercial social media applications.[102]

VI   CONCLUSION

Students today are overloaded with information and confronted by escalating levels of distraction. The challenge for legal academics is to recognise that they are in the market for the attention of their students all the time; to get them to enroll, while they are in face-to-face learning environments, and while they are engaged in study outside the classroom. Law students are likely to be increasingly tech savvy and to be carrying powerful mobile devices. Paradoxically, while this is the source of distraction for many students, it is also the key to creating opportunity for teaching methods which will hold their attention. These mobile devices create a whole new paradigm for the construction of a dynamic interactive learning experience in the classroom. Exciting opportunities exist for scaffolding learning and rethinking pedagogy to embrace the technology, manage distraction and compete effectively for student attention in an attention economy. Such interactive teaching and learning experiences have the potential to enhance teaching and learning. Importantly, while the technology is changing, the principles of effective teaching and learning remain the same. If face-to-face legal education is to remain relevant enough to survive amid distraction in an attention economy, the need to rethink pedagogy so as to embrace emerging technology is inescapable.

Universities may continue to develop and evolve their own integrated learning technologies such as HiST and OWL. Commercial applications are likely to increasingly dominate the educational landscape. The advantage of developing in house applications is the institutional control it creates over content, access, and methodology. An emerging area of future research will involve testing the effectiveness of the uses of current and emerging technologies in achieving student engagement and delivering enhanced teaching and learning outcomes.

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[100] Mark Davies and Barbara Lee, 'The legal implications of student use of social networking sites in the UK and US: current concerns and lessons for the future (2008) 20 (3) *Education and the Law* 259, 260.
[101] Ibid.
[102] QUT, *Social Media Guidelines for Learning and Teaching* (July 2011) < http://www.els.qut.edu.au/innovation/socialmedia/index.jsp>.

As with any economy, competition will produce winners and losers and ultimately only market leaders will survive. The challenge for lecturers in law is to embrace the creation of an efficient face-to-face product offering that can take advantage of (rather than suffer at the hands of) the 'digital backpack',[103] and facilitate enhanced teaching and learning outcomes for law students.

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[103] Oliver and Goerke, above n 19, 172.