

E-LEARNING — ARE ‘OLD’ COMMUNICATION AND LISTENING SKILLS BEING DEVALUED IN PURSUIT OF E-LEARNING?

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ABSTRACT

E-learning is being introduced in many courses in order to provide students with learning flexibility. Comprehension skills are being tested electronically and discussions take place in the virtual environment.

E-learning can address some of the hurdles of student attendance in a traditional classroom. These include the challenge of the ‘real time’ class requiring physical attendance in order to participate, the challenge of listening to a teacher for an extended time, the challenge of patience as class members ask questions, and the challenge of asking your own questions. All university teachers and students need to become good listeners and confident speakers.¹ Most students will require the discipline to attend a workplace and function in a team. These important disciplines are not addressed by e-learning.

The classroom has advantages that cannot be duplicated in the e-learning environment. The classroom provides the physical social interaction necessary for students to practise and develop their communication skills. It teaches a student to listen in a disciplined way, allows a student to ask questions, hear and evaluate responses and to think and reason and speak ‘on their feet’. ‘Although computers can be used to assist in the teaching of basic cognitive skills, it appears that they cannot engage students in the evaluation or synthesis of material, nor in activities in the affective domain.’² Classroom teaching provides a learning environment that cannot be wholly replaced by e-learning. The social interaction and disciplines essential to an effective classroom provide students with the communication and teamwork skills required by employers. The classroom also provides the social environment essential to developing neural plasticity; that is, modification of neural connections in the brain’s chemistry and, hence, the ability to learn.

I. INTRODUCTION

This paper will consider which ‘old’ communication and listening skills are being devalued in pursuit of e-learning. The paper will then address the issue of why it matters if these communication and listening skills are devalued in university education.

There are many reasons why Australian universities are adopting e-learning. ‘Some universities are wishing to meet student expectations for more flexible delivery and to generate efficiencies’³ in delivery and ‘in assessment that can ease academic staff workloads.’⁴

Biggs recognises that e-learning involves the use of technology in learning from simply ‘putting lecture notes on the web’⁵ to using educational technology to manage learning,

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1 Marlene Le Brun and Richard Johnstone, *The Quiet Revolution: Improving Student Learning in Law*, (1994) 103. The authors write about law teachers and students. However, all university teachers and students, whatever their discipline, need to become good listeners and speakers.

2 Ibid 245.

3 Richard James, Craig McInnis and Marcia Devlin (eds), *Assessing Learning in Australian Universities* (2002) Centre for the Study for Higher Education, University of Melbourne, 23
<<http://www.cshe.unimelb.edu.au/assessinglearning/docs/AssessingLearning.pdf>> at 1 December 2008.

4 Ibid.

5 John Biggs, *Teaching for Quality Learning at University* (2nd ed, 2003), 214.

engage learners in appropriate learning activities and assess learning, through to distance and total off-campus teaching.⁶

There is no single definition of e-learning. E-learning appears to encompass any use of any information and communication technology in learning and teaching ‘to either fundamentally change the way education is delivered to students, or using it to augment the traditional way that higher education has been conducted by replicating the classroom in an electronic environment.’⁷ E-learning can also involve the use of technology to research, retrieve lecture notes, conduct lectures and tutorials in the virtual environment, assess students in the virtual environment, conduct electronic discussions, or any combination of the above, with or without any real-time classroom interaction. For the sake of this paper, e-learning is all of the above.

This paper examines the work of Richard Ladyshefsky which demonstrated that e-learning, if well resourced and structured with sound pedagogy, can achieve grades equal to or even better than face-to-face classroom environments employing similar pedagogical principles. E-learning is essential in providing access to tertiary education for students who, because of geographic isolation, pressures of work, family or a mobility disability, may need good e-learning to be able to gain a tertiary qualification.

The classroom poses many challenges that e-learning can address. Some of these include the challenge of the ‘real-time’ class requiring physical attendance in order to participate, the challenge of listening to a teacher for an extended time, the challenge of patience as class members ask questions, and the challenge of asking your own questions. However, ‘[b]oth teachers of law and graduates in law need to become good listeners as well as accomplished speakers.’⁸

The research comparing the effectiveness of e-learning with traditional classroom learning, conducted by Ladyshefsky and considered in this paper, was performed in a business school. The study was limited to comparing the grades received by students undertaking the course using the two modes of delivery. The study did not consider the listening and speaking skills of the students, considered important to law students.

The classroom has advantages that cannot be duplicated in the e-learning environment. It teaches students to listen in a disciplined way, it allows students to ask questions, hear and evaluate responses and to think, reason and speak ‘on their feet’. Howard Barrows,⁹ the inventor of problem-based learning, is sceptical about the ability of e-learning to effectively replicate the effective face-to-face problem-based learning process. David Kember and Carmel McNaught¹⁰ highlight the use of discussion as one of the key principles of good teaching in higher education. As e-learning is incorporated into our university courses, are university educators sacrificing or devaluing the valuable skills of listening, questioning and verbal communication?

‘Although computers can be used to assist in the teaching of the basic cognitive skills, it appears that they cannot engage students in the evaluation or synthesis of material, nor in activities in the affective domain.’¹¹ This paper examines the work of Louis Cozolino and Susan Sprokay¹² on the importance of improving student neural plasticity and how this is best achieved in ‘the context of social interaction’.¹³ ‘The ability to learn is dependent on modification of the brain’s chemistry and architecture, in a process called “neural

6 Ibid 214 and 215.

7 David Annand, ‘Re-organizing Universities for the Information Age’ (2007) 8(3) *International Review of Research in Open and Distance Learning* 1, 8.

8 Le Brun and Johnstone, above n 1, 103.

9 Howard Barrows, ‘Is It Truly Possible To Have Such a Thing as dPBL?’ (2002) 23(1) *Distance Education*. Here, dPBL stands for distributed problem-based learning.

10 David Kember and Carmel McNaught, *Enhancing University Teaching: Lessons from Research Into Award-Winning Teachers* (2007).

11 Le Brun and Johnstone, above n 1, 245.

12 Louis Cozolino and Susan Sprokay, ‘Neuroscience and Adult Learning’ (2006) Summer 110 *New Directions for Adult and Continuing Education*.

13 Ibid 11.

plasticity”¹⁴ Cozolino and Sprokay demonstrate that improving neural plasticity improves the ability to learn in both young and adult learners. David Annand stated that, in university education, there was a ‘silent struggle underway within the academy to determine the appropriate means to employ technology’.¹⁵ This paper resists the seemingly ‘irresistible technological, economic and social imperatives (that) seem about to impose significant change on the conduct of higher education worldwide’¹⁶ and refocuses the debate on desirable student outcomes.

II. COMPARING E-LEARNING WITH FACE-TO-FACE LEARNING

The results of a quantitative study performed at the Curtin University of Technology Graduate School of Business, which compared students’ final grades as between units offered in e-learning and the face-to-face environment, are examined. The study was conducted over two years, over nine units, and examined the performance of 1,401 students.

This study recognised that the ‘paucity of controlled research which examines the differences in electronic learning and face to face learning’¹⁷ is due to the difficulty in controlling the ‘different variables influencing the educational outcome.’¹⁸ The variables include the ‘course design, the technological applications, pedagogical approaches, student and instructor characteristics, and methods of assessment’.¹⁹

The literature review conducted by Ladyshevsky found that ‘much of the criticism of EL [e-learning] stems from the inappropriate use of this technology to support learning. Educational programs that have merely posted material on the web and called it EL have been the centre of this criticism.’²⁰ Ladyshevsky concluded that ‘a high quality EL experience requires a pedagogical approach that creates a responsive and creative learning environment.’²¹ The results of the study demonstrated that the same high quality pedagogical approach required for good face-to face-learning is required for e-learning. Ladyshevsky summarised the results of a study of 436 randomly chosen websites conducted in 2000 which ‘found that most sites promoted individual rather than collaborative learning; direct instruction rather than inquiry; clicking rather than communicating; automatic feedback rather than guidance; and memorization rather than knowledge construction’;²² that is, most sites demonstrated poor pedagogical practices. Poor pedagogy is not limited to e-learning and would be practised in many university lecture halls and tutorial rooms around Australia.

Ladyshevsky’s study attempted to compare the same pedagogy in the e-learning environment with the classroom environment. This was done by selecting nine units and offering them as a ‘fully online unit involving no face to face interaction’²³ as well as in classroom mode. The same unit coordinators responsible for the face-to face-classes were also responsible for moderating the virtual classroom. The coordinators were supported by ‘two full time EL staff and a part time educational specialist.’²⁴ The study attempted to create the same pedagogical environment whether the delivery was via the virtual classroom or the real classroom.

14 Ibid.

15 Annand, above n 7, 8.

16 Ibid.

17 Richard K Ladyshevsky, ‘E-learning Compared With Face to Face: Differences in the Academic Achievement of Postgraduate Business Students’ (2004) 20(3) *Australasian Journal of Educational Technology* 316-336.

18 Ibid.

19 Ibid.

20 Ibid 2.

21 Ibid.

22 Ibid.

23 Ibid 6.

24 Ibid 7.

The study focused on the ‘pedagogy behind unit design and delivery’²⁵ and this included:

- Avoiding the tendency to merely post information on the web;
- Designing a responsive and creative learning environment which included:
 - Ensuring high quality regular contact between students and instructor through emails and discussion rooms;
 - Active learning strategies such as self-assessments, practical activities and project-based assignments;
 - Transparent student expectations with detailed instructions and timelines;
 - Alignment between online activities, responsibilities and assessment;
 - Keeping discussion rooms to a manageable size, at levels of 10 to 15 students; and
 - Providing a help desk to help students with technical aspects.²⁶

The above good pedagogical practices were, presumably (the report on the study was silent on this point), also present for the face-to-face students. Ladyshefsky stated that ‘the close team work of the staff also ensured that there was a similar structure and level of quality across the units ... and having who developed the F2F (face-to-face) version of the unit, also creating the EL unit’.²⁷

The results of this study showed that ‘if a high degree of pedagogical thought goes into the design and delivery of EL, and is supported by adequate resources, positive educational outcomes can be achieved by students.’ The study recognises that even though the quantitative grades achieved by students demonstrated that student performance was slightly better using e-learning, grades are not the only measure of student performance.²⁸ Employer expectations of university graduates, examined later in the paper, encompass more than academic grades. Employers and universities are giving prominence to ‘the development of generic skills such as communication skills, teamwork skills and critical thinking, in the desired outcomes of higher education’.²⁹

The research by Ladyshefsky, however, provides assurance that good pedagogy in the classroom can be replicated on the web and can deliver academic grades comparable to those achieved in the classroom. This outcome is positive for distance learners and educators.

III. ‘OLD’ COMMUNICATION SKILLS

The biggest constraint of the ‘virtual’ learning environment is the fact that it is a ‘virtual’ environment, not a physical environment. The e-learning environment can emulate a classroom. It can allow for real-time activities, group activities and ‘discussions’. The e-learning environment can simulate many aspects of a physical classroom except the most important one, the experience of actually being in a classroom. Biggs states that ‘[t]he great benefit of online teaching is two-way communication.’³⁰ The great benefit of classroom teaching is two-way communication and, further, multi-way communication. For example, the teacher communicates with the class and the class gives the teacher instant feedback on any comprehension problems. The teacher’s response is then heard by all the members of the class, not only those who asked the question.

Going to classes requires a number of ‘old’ communication skills such as:

- The discipline required to dress, and physically get to the class on time;
- The discipline required to listen to material that is not always engaging, that may go on for too long;

25 Ibid 10.

26 Ibid 10 and 11.

27 Ibid 12.

28 Many students would dispute this assertion, being firmly focused on their final grades as outcomes.

29 Richard James, Craig McInnis and Marcia Devlin (eds), above n 3, 3.

30 Biggs, above n 5, 216.

- The social skill to politely listen to the questions of other students that may not be relevant for you;
- The patience to work in a group, not of your own choosing, to answer a problem that you may not find inspiring; and
- The perseverance to attend on a regular basis.

This list of skills appears to be a dreary list of worthy attributes. However, it ignores the joy of learning that can be found in a classroom. The joys of the group dynamic can be a real aid to understanding not only the academic material necessary to pass a subject, but the life experiences of the class. Very few students will get employment in an industry where they can work totally in the ‘virtual’ environment.

This defence of the virtues of attending class and being polite, showing respect and acquiring social skills could sound like the last roar of a dinosaur refusing to acknowledge its own extinction. Gilly Salmon calls those holding these views ‘Web-phobes’ who ‘are very worried that the benefits of learning together may be lost and that it will be a bad day for knowledge, for feelings, for the joys of gatherings and groups.’³¹ She continues that, while some are bemoaning the loss of the classroom,

[s]ome of us are getting on with it! Small factions of teachers, researchers and trainers have led the way. Like all pioneers, they have a tough time. For them, and for the thousands of online teachers that will follow, I hope this book will be of interest and of use. It’s time to start the wagon train again but this time with a rough and ready trail to follow.³²

This paper proffers two arguments in mitigation of its position:

1. Employer expectations:
Listening and speaking, thinking on your feet and physical and mental attendance (be it in a classroom, office, chambers, client meetings, etc) are generic skills. These generic skills, however, are the skills required by employers and require some ‘real time’ and ‘real class’ practice by students.
2. Educators as neuroscientists.³³

IV. EMPLOYER EXPECTATIONS OF UNIVERSITY GRADUATES

Many universities conduct surveys of graduate employers with the aim (among others) of identifying ‘employer perceptions of the key capabilities needed by graduates in the wide range of professions catered for’³⁴ by the university conducting the survey. In 2007, the survey conducted by UWS ‘went out to all the employers of UWS graduates between 2005 and 2006’³⁵ and 146 employers responded. As part of the survey, employers were invited to identify ‘the most important attributes, abilities, skills, and knowledge needed by graduates for effective performance in their particular profession in coming years.’³⁶ The employers were asked to rate the relative importance of 44 aspects of professional capability as identified in national and international studies of early career graduates.³⁷ The top 10 aspects as selected by employers were:

1. Being able to communicate effectively;
2. Being flexible and adaptable;
3. A commitment to ethical practice;
4. Being willing to face and learn from errors and listen openly to feedback;
5. Being able to organise work and manage time effectively;
6. Wanting to produce as good a job as possible;

31 Gilly Salmon, *E-moderating: The Key to Teaching and Learning Online* (2000), viii.

32 Ibid.

33 Cozolino and Sprokay, above n 12, 11: ‘[T]he most effective adult educators may be unwitting neuroscientists.’

34 University of Western Sydney (UWS), *Employer Survey 2007* (2007), 1.

35 Ibid.

36 Ibid 3.

37 Ibid.

7. The ability to empathise, and work productively, with people from a wide range of backgrounds;
8. A willingness to listen to various points of view before coming to a decision;
9. Being able to develop and contribute positively to team-based projects; and
10. Being able to set and justify priorities.

The University of Tasmania conducted a similar survey in 2003 called 'Employer Expectations and Satisfaction with University of Tasmania Graduates 2003'.³⁸ The Tasmanian survey sampled 365 employers from a range of business types, sizes and locations.³⁹ This survey requested employers to rate '26 attributes, skills and competencies which they expected graduates employed by their company to demonstrate on entering their employment.'⁴⁰ The top five attributes as selected by employers were:

1. Communication skills;
2. Capacity to act ethically;
3. Capacity to learn new skills and procedures;
4. Capacity for cooperation and teamwork; and
5. Ability to apply knowledge in practice.

The top 10 selection criteria used by 271 graduate employers in the *2007 Graduate Outlook* report by Graduate Careers Australia (GCA)⁴¹ included:

1. Interpersonal and communication skills (written/oral);
2. Critical reasoning and analytical skills/problem-solving/lateral-thinking/technical skills;
3. Passion/knowledge of industry, drive/commitment/attitude;
4. Cultural alignment/values fit;
5. Academic qualifications;
6. Teamwork skills;
7. Emotional intelligence (including self awareness, strength and character, confidence, motivation);
8. Work experience;
9. Activities — includes both intra and extracurricular; and
10. Leadership skills.

The two university surveys and the selection criteria demonstrate that communication skills are the number one attribute that employers seek from university graduates.

Rated most highly by employers are 'communication skills', 'capacity to act ethically', 'capacity to learn new skills and procedures', 'capacity for cooperation and teamwork' and 'ability to apply knowledge in practice'. This group of attributes emerges as important for the majority of employers.⁴²

Some of the broad and overarching attributes which deal with world views and social and cultural sensitivities — such as 'international experience', 'international awareness' and 'capacity to function in a multicultural/global context' — were not regarded as very important in a new graduate employee. In addition, 'management and supervisory skills' and 'IT/computing skills' were also regarded as less important than communication skills. These latter responses were clarified by the qualitative analysis of employers' open-ended comments in which a number of employers explained that they expect both of these sets of skills to be learned most appropriately 'on the job'.⁴³

38 Joan Abbott-Chapman, 'Employer Expectations and Satisfaction with University of Tasmania Graduates 2003' (Final Report Presented to Professor Sue Johnston, Pro-Vice-Chancellor (Teaching and Learning), November 2003).

39 Ibid 2.

40 Ibid 35.

41 University of Western Sydney (UWS), above n 34, 5-6.

42 Abbott-Chapman, above n 38, 74.

43 Ibid 73.

V. IMPROVING STUDENT NEURAL PLASTICITY

Literature explored by Cozolino and Sprokay supports the statement that the ability to learn is dependent on the brain’s ‘neural plasticity’.⁴⁴ ‘Neural plasticity reflects the ability of neurons to change their structure and relationships to one another in an experience-dependent manner according to environmental demands.’⁴⁵

Cozolino and Sprokay challenge the accepted view of ‘thinker as solitary’⁴⁶ and considered research by neuroscientists that found that the brain ‘flourishes best within the context of social interaction. However one may hold the notion of individuality and the isolated self, humans have evolved as social creatures and are constantly regulating on another’s internal biological states.’⁴⁷ Even though e-learning can provide a ‘virtual’ social environment, with discussion rooms and other two way communication possible, e-learning cannot provide the physical social environment that promotes neural plasticity, leading to better learning.⁴⁸

It is becoming more evident that through emotional facial expressions, physical contact, and eye gaze — even through pupil dilation and blushing — people are in constant, if often unconscious, two-way communication with those around them. It is in the matrix of this contact that brains are sculpted, balanced, and made healthy. Among the many possible implications of this finding for the adult educational environment is the fact that the attention of a caring, aware mentor may support the plasticity that leads to better, more meaningful learning.⁴⁹

Cozolino and Sprokay recognise that classroom teachers ‘[i]ntuitively using a combination of language, empathy, emotion, and behavioral experiments ... promote neural plasticity and network integration.’⁵⁰

Cozolino and Sprokay are emulating the traditions of the humanistic educational philosophers, such as ‘Rousseau, who instructs “Begin thus by making a more careful study of your pupils, for it is clear that you know nothing about them”.’⁵¹ In the modern context, Barbara Fines equates the humanistic approach to education as the ‘student centered approach’.⁵² In the context of teaching law, Fines states:

Student-centered teaching is as fundamental to our humanistic educational philosophy as client-centered counseling to humanistic psychology or legal practice. We teach our students as individuals, with all their diverse personalities, intelligences, backgrounds and circumstances.⁵³

Teaching students as individuals is not possible in the virtual environment where teachers never see their students. Teachers may respond to individual written queries of their students and get to know them in a virtual sense but that is only one dimension of a student. If the e-learning course allows for the occasional physical class in order to facilitate presentations, these occasions are sufficiently rare or time-pressured that the teachers can’t get to know the students individually. Also, the students will be under pressure to perform, as opposed to the routine of ‘performing’ in weekly classes where a rapport can be established between the teachers and students, and between students.

44 Cozolino and Sprokay, above n 12, 11.

45 Ibid.

46 Ibid 13.

47 Ibid.

48 Ibid.

49 Ibid.

50 Ibid.

51 Barbara Glesner Fines, ‘Fundamental Principles and Challenges of Humanizing Legal Education’ (2008) 47 *Washburn Law Journal*, 313, 319.

52 Ibid.

53 Ibid.

VI. CONCLUSION

Even though e-learning can provide useful learning alternatives and learning support, it will always be providing a second class-learning environment because it cannot replicate all the experiential features, such as facial expressions, physical contact, eye gaze, empathy and emotion, essential to the growth of neural plasticity.

Again, from Cozolino and Sprokay:

Studies with birds have demonstrated that the ability to learn their 'songs' can be enhanced when exposed to live singing birds as opposed to tape recordings of the same songs. ... Other birds are actually unable to learn from tape recordings and require positive social interaction and nurturance in order to learn.⁵⁴

Like birds, some students can perform well using only the virtual environment to learn, while other students' learning outcomes will be disadvantaged in the virtual environment. However, all students using the virtual environment for their learning will miss out on the optimum learning experience using the virtual environment. They all miss out on the experience of developing 'a safe and trusting relationship' with their teacher and their class. Students in e-learning environments miss out on the 'activation of both thinking and feeling',⁵⁵ which is essential to effective learning and communication.

In the words of Cozolino and Sprokay, 'like birds learning their song, people probably engage more effectively in brain altering learning when they are face-to-face, mind-to-mind and heart-to-heart.'⁵⁶

⁵⁴ Cozolino and Sprokay, above n 12, 13.

⁵⁵ Ibid 12.

⁵⁶ Ibid.