

Improving NESB Students' Learning in Communication through Simulating Social Media: An Australian Case Study

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Accepted: October 14, 2012 Published: November 14, 2012

Doi:10.5296/ijld.v2i6.2538

URL: <http://dx.doi.org/10.5296/ijld.v2i6.2538>

Abstract

Australian universities are mindful of graduating students who are prepared for the workforce. A growing trend in organisational communication is the use of digital/electronic media to communicate with stakeholders, and many universities are now adopting pedagogy that simulates professional use of social media.

International students who come from non-English speaking backgrounds (NESB) and are new to Australian university study can often struggle with understanding information that is delivered verbally, particularly when delivered under the traditional lecture/tutorial or didactic approach. The use of online communication in the curriculum can improve employability skills and heighten comprehension for NESB students.

This paper examines results by NESB students mainly from Chinese universities studying through a collaborative articulated pathway program who have completed the core communication unit between 2010 and 2012. The majority of these students have come from limited English-speaking environments. The paper analyses their results and uses contemporary literature to form conclusions on cognitive capabilities for the NESB cohort when studying this introductory unit on-campus.

The student results and the literature analysed demonstrates that NESB students perform better when comprehending and consolidating knowledge delivered through interactivity involving digital communication, primarily e-text-based content that simulates social media. It concludes that electronic communication based on social media model can heighten NESB student engagement and improve employability.

Keywords: E-text, Simulating Social Media, Online Learning, International Students

1. Introduction

Governments globally are formulating policy in respect of linking economic progress with higher education and the development of human capital (Knight & Yorke, 2002). Graduate employability is defined by Knight and Yorke (2002) as possessing understanding, skills and personal attributes to perform adequately in a graduate-level role. These attributes include behavioural competencies or 'soft skills' that go beyond disciplinary expertise or technical knowledge and requires program managers and unit convenors to rethink higher education pedagogy (Yorke, 2010; Barnie, 2006).

One such set of soft skills that has an ever-growing importance in the discipline of professional communication is the proficient use of text in social media and social networking sites (Fitch, 2009; Dwyer, 2009). Students are part of the biggest demographic group utilising social media sites at present (Staley, 2009). However, participating professionally in such mediums requires an understanding of the linkages and the empowering of individual opinion as a catalyst for persuasion (Kirkwood, 2010). Social media highlights the participation culture that organisations need to acknowledge and utilise both internally and externally (Staley, 2009; Dwyer, 2009).

The Yellow Pages Social Media Report 2012 indicates that Australian businesses, small and large, are embracing the use of social media as a communication tool, especially in terms of marketing and reputation management, making it a criteria for aspiring employees (Sensis, 2012). One of the benefits of social media and networking is it allows individuals to engage in online interaction where the level of spoken English is not an issue and decoding doesn't need to be instantaneous (Mohan, McGregor, Saunders & Archee, 2010). This can make online interaction an ideal learning medium for international students studying on-campus at Australian universities.

Many Australian curriculum developers frequently face the challenge of how to improve comprehension and thus the academic performance of NESB students from a non-English speaking background (NESB) who are studying at higher education institutions that deliver in English (Dunn, 2011; Bretag, Horrocks & Smith, 2002). The most typical definition for 'NESB' refers to individuals who spoke a language other than English in their home (Dobson, Birell & Rapson, 1996). This is particularly relevant to international students who enrol in communication units delivered on-campus in Australia that by nature involve a significant amount of written and spoken English (Hatherell & Bartlett, 2005).

One solution to the challenges of nurturing quality discussion (usually dominated by face-to-face discussion) between English speaking background (ESB) students and NESB students is to mix-in online discussion to the curriculum. Simulating social media platforms into the delivery of a unit can ease the anxiety that often besets NESB students and can inhibit them from actively engaging in the classroom discussion (Kirkwood, 2010; Bretag *et al.*, 2002). Higher education students are often confident with the process of social media engagement, and this online discussion can alleviate the challenges NESB students face in terms of pronunciation, grammar and vocab issues (Grenfell, 2010; Dodigovic, 2002). Students are comfortable and aptly skilled to evolve discussion at a high-level through these platforms, regardless of their spoken English capabilities (Bretag *et al.*, 2002, Harris, 2008).

This paper examines results by NESB students, mainly from Chinese universities studying through a collaborative articulated pathway (CAP) program, who have completed a core communication unit between 2010 and 2012. The 2011 and 2012 cohort studied the unit through blended delivery incorporating simulated social media into the unit discussion, while the 2010 cohort did not. The majority of these students have come from limited English-speaking

environments. Blended delivery was introduced in 2011 after a comprehensive multimedia study conducted on the 2010 cohort demonstrated NESB students performed better with e-text (hypertext and hyperlinks) than with audio discussion and links. The paper analyses the cohorts' results and uses contemporary literature to form conclusions on cognitive capabilities for the NESB students when studying this communication unit on-campus.

The student results and the literature analysed demonstrates that NESB students perform better when comprehending and consolidating knowledge delivered through interactivity involving digital communication, particularly e-text-based content that simulates social media.

2. Literature Review

2.1 Employability and social media

There is strong evidence that social media is playing an active role in professional communication, as many academic textbooks devote considerable text to the effective use of social media and networking (see for example: Mohan *et al.*, 2008; Euneson, 2008; Dwyer, 2009; Bovee & Thill; 2010). The Guardian Higher Education Network (Knight, 2011) stated that more than half the UK population now have internet capability through their mobile phones and that government and industry need employees who are digitally literate – those capabilities that equip an individual for living, learning and working in a digital society.

Longstanding links have been made between higher education and economic activity, with an emphasis on stronger connections to the needs of employers (Yorke, 2010). The ever-expanding use of social media, especially mobile media devices, enables potential publics to be engaged with organisations and businesses almost continually, and decision makers within these organisations need to have the expertise on hand to connect at the right level (Kaplan & Haenlein, 2010). In 2005 the State of New York began to assess high school students on being 'work ready', with a central feature and outcome of the process was the increase reliance on 'technologized' communication (Thurlow & Bell, 2009; Sensis, 2012). While higher education has been preparing students for the disciplinary needs of employment adequately, Knight and Yorke (2002) argue the generic attainments (including metacognition and self-efficacy) beyond transferable skills are not sufficiently evident. Applying this to the discipline of communication, whilst students can use the technology effectively to communicate within social media, the discipline of effective professional communication needs further application at the higher education level.

Universities and colleges have a responsibility to develop students into individuals who can thrive in a digital work environment, as these individuals will be more economically secure (Knight, 2011). Current higher education policies for communication are pre-occupied with instructing students in practical interventions to promote instrumentalists without sufficient focus on contextualised notions, often characterised in social media text, according to Thurley and Bell (2009). Immense opportunities for graduate employees with professional social media skills now exist, particularly for small to medium-sized businesses seeking to strengthen their brand and stakeholder engagement (Sensis, 2012). Higher education policy-makers should seek to develop qualifiable, situated and power-embedded social practices for digital communication in relationship management (Thurley & Bell, 2009).

As Thurley and Bell (2009) state, it is the responsibility of scholars to offer alternative, well-rounded perspectives on the nature and purpose of communication through social media as an inherent sociability for human communication, and not just using technology for the sake of technology. The social media revolution and being able to operate effectively within that space is in the interests of all organisations (Kaplan & Haenlein, 2010). The future of higher education

pedagogy revolves around students becoming mediators of their own education, and the importance of social media will continue to evolve by playing a commanding role in education and in the workplace (Kirkwood, 2010).

2.2 Using e-learning in higher education

E-Learning in education is defined as involving the use of electronic devices to deliver, facilitate or encourage interaction for the purpose of providing instruction, knowledge and training (Clark, 2008; Karrer, 2007). E-learning involves learner-centred pedagogy that allows students to utilise technology in order to access vast resources and have greater control over the pace, methods and routines for learning (Holmes & Gardner, 2006; Rosenberg, 2001; Spiro & Jengh, 1990). Text used in e-learning (e-text) refers to electronic files that serve the same purpose as traditional printed text, with hypertext being e-text that is cross-linked to various digital resources (Wang & Verezub, 2011). From a higher education perspective, NESB students who study with e-learning as part of the curriculum are given greater opportunity to employ their preferred cognitive style (Ramburuth & McCormak, 2001; Wang & Verezub, 2010).

A defined benefit to e-learning is the ability of students to explore broader information through hypertext - described simply as an electronic reading and writing space (Hicks, Reid & George, 1999; Inman, 2000). Hypertexts are often non-linear, but hypertext resources are able to provide the users more interactive experiences than traditional ones (Wang & Verezub, 2010). A hypertext is cross-linked to various digital resources, and a user can follow a clickable hyperlink to other web pages or another document when interacting with a hypertext. Such functionality provides opportunity for deeper comprehension, as opposed to surface retention of facts and information (Ramburuth & McCormak, 2001). This function is particularly advantageous for NESB student who may be grappling with comprehension of aural text.

Cognition has been a challenge for NESB students learning in a traditional didactic environment delivered in English (Bretag *et al.*, 2002; Ramburuth & McCormak, 2001; Wong, 2004). Cognition refers to the mental processes involved in comprehending knowledge and includes thinking, knowing, remembering, judging and problem-solving. Higher-level brain functions for cognition encompass language, imagination, perception and planning (Cherry, 2011). Cognitive style, according to Kozhevnikov (2007) refers to consistencies in an individual's manner of cognitive functioning, particularly with respect to acquiring and processing information. Cognitive styles are not culturally or nationality assigned functions, but cognition can be significantly influenced by a NESB student's ability to comprehend information presented (Ramburuth & McCormick, 2001; Wong, 2004).

Social media is a platform that can allow NESB students to engage in discussion that clarifies, expands and provides autonomy over content, without the added challenge and immediacy of aural comprehension (Kirkwood, 2010; Wang & Verezub, 2010). Social media includes web-based applications and mobile technologies used to turn communication into interactive dialogue, allowing the creation and exchange of user-generated content (Kaplan & Haenlein, 2010). Social media has substantially changed the way organisations, communities, and individuals communicate, making it particularly relevant to higher education curriculum (Harris, 2008). Academic institutions often already have online learning management systems, which can simulate or accommodate social media platforms (Kirkwood, 2010; Grenfell, 2010; Bretag *et al.*, 2002).

Generally, unit designers and academic staff perceive students to be more digitally capable than is the case and often don't employ the pedagogy to ensure that students are digitally literate, according to a Joint Information Systems Committee (JISC) study of 3,500 learners

(Knight, 2011). If design is focussing on developing both transferrable skills to industry and a pedagogy to heighten NESB engagement in discussion, then consideration needs to be given to NESB learning capabilities.

2.3 NESB students' learning

Much research has demonstrated that NESB students who rate well on English standardised testing struggle to comprehend academic content delivered in English, especially when presented through the auditory channel (Carstairs, Myors, Shores, Fogarty, 2006; Dodigovic, 2002; Kasper, Babbit, Williams Mlynarczyk, Brinton, Rosenthal, Master, Myers, Egbert, Tillyer & Wood, 2009). Poor comprehension by NESB students is often compounded by accents, colloquial terminology, diverse assessment processes, discipline-specific vocab and rapid aural delivery (Kasper *et al.*, 2009). Particularly challenging for Chinese students, is the convoluted verb system for the English language compared to native Asian languages (Dodigovic, 2002). This literature indicates that many NESB students will struggle with curriculum content delivered through a traditional didactic approach, especially in an over-lecturing pedagogy (Kirkwood, 2010; Ramburuth & McCormick, 2001). Studies also indicate that learning styles are not culturally based but contextual, and that every opportunity should be given to NESB students to engage on an 'even footing' (Wong, 2004).

A pedagogy design providing more equal opportunity for NESB students to perform to their optimum abilities must be considered. Many studies have anecdotally and empirically demonstrated that online 'content-based' delivery effectively increases proficiency in English language comprehension for NESB students, enabling them to participate more fully in the complex academic and social environment of Australian universities (Carstairs *et al.*, 2006; Kasper *et al.*, 2009). Research conducted by Bretag, Horrocks & Smith (2002) provided a collection of academic learning strategies to aid the comprehension for international (particularly Chinese) students studying in Australian universities. These strategies include: an interactive student-centred tutorial approach, opportunity for peer tutoring and peer discussion, facilitate students' access to text information, develop strategies to compensate for students' lack of English language fluency, and provide opportunities for students to use their English writing skills for non-assessment tasks.

Another consideration is the use of multi-media though hyperlinks to accommodate diversity in learning styles for NESB students. Mayer's (2009) cognitive theory of multimedia learning interprets the cognitive processing of presented multimedia content. There are several steps that help learners build relationships between the presented multimedia information and their prior knowledge. This involves: receiving words and image sources by ears and eyes at sensory level, selecting and forming the received materials at mental level; and, organising the selected materials, then connecting them with the learners' prior knowledge (Mayer, 2009). A process made more effective for NESB students when given the autonomy to interact with the content in their own time (Wong, 2004).

The use of text-based online communication simulating social media incorporating hypertext and hyperlinks is one method of assimilating these strategies into the curriculum.

2.4 Social media and curriculum

The principles of the knowledge economy mean that active online learning is paramount to success, and success is dependent upon engagement and producing knowledge, according to Kirkwood (2010). The above literature and research have indicated that NESB students have the opportunity to engage in discussion and enhance their comprehension through the use of online media and networking technology.

As mentioned, vast numbers of tertiary students already possess the necessary skills and ability to participate in online discussion through communication technologies, so e-text should be utilised to promote unbridled engagement (Grenfell, 2010; Altun 2003). These capabilities provide both NESB and ESB students the proficiency and confidence to operate in this space at an academic level (Kirkwood, 2010; Harris, 2008). Integral to the success of an online discussion forum is the educator's role, which is to introduce and support peer-assisted knowledge sharing in an active and collaborative process (Grenfell, 2010; Wong, 2004). Unit developers and convenors are charged with providing a pedagogical platform that enables all students the opportunity to engage with the curriculum at a meaningful level; and an online discussion forum does enable this to occur (Dodigovic, 2002; Kirkwood, 2010; Grenfell, 2010).

The use of e-text discussion is deemed acutely important to encouraging critical exchange and academic development, according to Harris (2008). Social media platforms in education encourage online engagement and the use of hyperlinks expands the dialogue outside of the classroom and builds better communication channels and broader opportunity for learning (Bretag *et al.*, 2008; Harris, 2008). Student dialogue actually becomes part of the developing curriculum, as participants contribute to the direction of the learning (Kirkwood, 2010; Kasper *et al.*, 2009).

The integration of social media platforms into the curriculum also has the added benefit of enhancing employability skills, particularly for communication students, as the digital competence for adolescent students is frequently overstated (Knight, 2011). Therefore, the quality of learning and the development of employability skills can be significantly enhanced through the use of online discussion and web-based technology (Dror, 2008; Bretag *et al.*, 2008; Wang & Verezub, 2010; Knight, 2011).

3. 2010 Multimedia Research

The university's communication unit had a high intake of international Chinese students through an ongoing CAP program. It had been observed that NESB students had generally performed below average with unit assessment that required articulate oral and writing skills. This is in keeping with similar observations relating to NESB students and poor English language comprehension at other Australian universities (Dunn, 2011).

To investigate the curriculum delivery, a study was conducted in 2010 with the core communication unit students to measure comprehension in the learning process for ESB and NESB students. The study aimed to examine the effects of different media formats in an active learning process. NESB students who participated in the study were asked to read and comprehend various multimedia materials (one per session) presented in the hypertext format. These hypertexts contained different types of media links, including image, audio, video, animation and text.

There were 70 NESB and 180 ESB students who enrolled in the second semester 2010 for this core unit. All students were invited and agreed to partake in the study. Tasks using a multimedia format (e.g. audio link, video link etc.) were integrated into the unit's curriculum in line with tutorial and lecture content. It was hypothesised that the NESB students would show maximum performance of interactivity with hypertext with text links (Wang & Verezub, 2010). The final number of NESB participants who completed the seven sessions in full was 27. Others withdrew from the study or did not complete tasks to the required stage for various reasons.

The findings from this research supported the hypothesis (see Appendix One). The study demonstrated that while reading hypertexts with different media formats, the format of instructional materials had an influence on NESB students' reading comprehension. When interacting with a multimedia task, the visual and audio stimuli are encoded by two cognitive sub-systems respectively: visual channel and audio channel (Wang & Verezub, 2010). Psychological research has previously demonstrated that audio information is in fact more easy to be comprehended when presented together with visual information rather than that presented separately (Mayer, 2009). However, language is one of the key issues that affect the students' cognitive processes during the learning activities, and that NESB individuals tend to show a disadvantage in listening-related subtests due to a lack of proficiency in English (Carstairs *et al.*, 2006). Thus, hypertexts with audio links would likely reduce the interactivity while reading hypertext with audio links.

Overall, the collected data from the study indicated that NESB students would show maximum performance of interactivity with hypertext containing text links (see Appendix One).

4. Changes to the Core Communication Unit Curriculum

Based on the results of the above study the structure for the communication unit delivery was changed to a blended model from 2011, where in-classroom discussion introduced topics, principles and theories, which were then expanded upon over the course of the week through the learning management system's, Blackboard, 'Discussion Board' function and Twitter. This enabled students to expand on classroom discussion via e-text and hyperlinks. The weekly lecture remained as a one-hour lecture hall style of delivery, but was recorded and loaded onto the Blackboard site for the unit (as has been the case for many years). Readings associated with the weekly topics remained either from the prescribed text, or available through the online library access.

Guidelines were introduced through 'Directions for Online Discussion' for the prescribed on-line activity. The guidelines specified that postings should follow the principles of social media, with contributions to be conversations and hyperlinks focussed around weekly unit topics. Some of these principles included: keeping postings to a maximum of 300 words; encouraging the use of relevant hyperlinks; encouraging the use of academic referencing; discouraging the use of 'Internet Slang' (online phrases, abbreviations, acronyms and idioms), (Boyd & Ellison, 2007). Students were also tutored in maintaining a commitment to positive discussion through online engagement. The intention was to simulate social media as a professional communication medium, where students produced meaningful and comprehensible writing in line with professional objectives, but written in a social media genre (Klastrup, 2009; Sensis, 2012).

Twitter was also introduced as a 'message board' means of communication. It was used more specifically to introduce new key ideas into the discussion and for administration purposes. This was a deliberate strategy to represent the use of Twitter by organisations as a means of messaging key stakeholders, but not as a means to engaging in information exchange and feedback (Klastrup, 2009).

The combined classroom and on-line discussion formed 45% of the assessment marks for the unit, and replaced the old hard-copy sheets. A new marking guide was provided to the students indicating posts would be assessed on their: quality of information; relevance; judicious use of hypertext and references; building on the discussion from previous participants; and,

contributing positive knowledge to the discussion. Other assessment work including a hard-copy assignment, presentation and test remained the same.

5. 2010-2012 Cohort Study Results

The following results (Table 1, Table 2 and Table 3) represent the student grades for the core communication unit undertaken at the university from 2010-2012. The 2012 results refer only to semester 1, which had been completed at the time of writing.

Table One: Semester 1 and 2, 2010 grade results

21% of student group were NESB

Grade	NESB	% of NESB students	% of grade made up of NESB	Other Students
N (Fail – below 50%)	3	4%	14%	18
P (50%-64%)	31	37%	22%	110
C (65%-74%)	38	45%	22%	133
D (75%-84%)	12	14%	18%	55
HD (85%-100%)	0	0%	NA	1

Table Two: LPR100 Semester 1 and 2, 2011 grade results

18% of student group were NESB

Grade	NESB	% of NESB students	% of grade made up of NESB	Other Students
N (Fail – below 50%)	4	5%	7%	51
P (50%-64%)	30	40%	19%	131
C (65%-74%)	23	31%	15%	133
D (75%-84%)	16	21%	25%	59
HD (85%-100%)	2	3%	22%	7

Table Three: LPR100 Semester 1, 2012 grade results

14% of student group were NESB

Grade	NESB	% of NESB students	% of grade made up of NESB	Other Students
N (Fail – below 50%)	3	9%	12%	23
P (50%-64%)	11	33%	9%	115
C (65%-74%)	12	36%	20%	49
D (75%-84%)	6	18%	22%	21
HD (85%-100%)	1	3%	100%	0

There were 84 NESB student enrolments in the core communication unit 2010, 75 NESB student enrolments for 2011, and 33 NESB enrolments for semester 1, 2012. It should be noted that generally semester 2 for each year has a significantly higher percentage of NESB students due to a new intake of CAP students from China.

In terms of marks for semester 1, 2010, one NESB student achieved a top 10 result and four NESB students were in the top 20 results. For semester 2, 2010 one NESB student was in the top 10 and three in the top 20. However, results for semester 1, 2011, when a blended approach incorporating text-based electronic discussion to learning was introduced, two NESB students featured in the top 10 results, with one NESB student finishing fourth overall - just two full marks behind the best performing student. In semester 2, 2011, one NESB was top five, and seven finished top 20 – making up 35 per cent of the top 20 students. In semester 1, 2012, the top three students were NESB, and six NESB finished top 20 – making up 30 per cent of the top 20 students.

In 2010, five of the bottom 25 students were NESB students, and in 2011, three NESB students were in the bottom 25 students. In 2012 three of the bottom 25 students were NESB. This statistic also includes students who did not complete all assessment and/or failed to complete the unit but remained enrolled.

Another interesting record is that during 2011, the NESB students contributed 36% of the posts on discussion board for tutorial discussion, but made up only 18% of the unit enrolments for that year. In 2012, NESB student contributions made up 38% of the posts, but they made up only 14% of the unit cohort. The NESB students contributed an average 48.5 posts per student (or five posts a week), compared with an average post of 17 posts per student (or two posts a week) from the rest of the unit cohort.

Further to this result, NESB students performed much better with the online assessment test in 2011 than in 2010. In semester 2, 2011, 16 results of the top 20 results from the online test were from NESB students, while in semester 2, 2010 there were only seven NESB students. In 2012, the top three test results were NESB, and six from the top 20.

6. Analysis and Discussion

A surface comparison of the core communication unit results for NESB students across the three years reviewed do not reveal any remarkable improvements since the introduction of blended learning incorporating social media discussion. In fact, the percentage of NESB students failing the unit increased over the years. However, a deeper analysis exposes a shift in the grading for NESB students passing the unit. NESB students have achieved much improved pass-marks in the unit since the introduction of online discussion from 2011. For example: over the three years the percentage of NESB students gaining a Credit or greater was around 57%. In 2010 only 14% of NESB students achieved a Distinction or higher. However, in 2011 and 2012 it rose to 24% and 21% respectively. In semester 1, 2012 the top mark for the unit came from a NESB student.

The comparison between ESB and NESB students also reveals a shift in strong grades. In 2010 22% of Credits in the unit were achieved by NESB students, and 18% of Distinctions were NESB students, but no Distinctions. In 2011, NESB students achieved 25% of Distinctions and 22% Higher Distinctions. In 2012, NESB students, who made up only 14% of the class group, achieved 22% of Distinctions and 100% of Higher Distinctions.

Since the changes to the curriculum introduced e-text contributions to form a considerable part of the assessment process, the above results correlate with previous research conducted on learning diversity for NESB (particularly Chinese) students in Australia (Ramburuth &

McCormack, 2001; Bretag *et al.*, 2002). Through these results, with the NESB cohort being heavily dominated by Chinese CAP students, Asian students appear to function less effectively with auditory learning than with hypertext, compared to Australian students who indicated a preference for this mode of learning, as also found by Ramburuth & McCormack (2001).

Recorded results also validates the 2011 and 2012 NESB students' stronger preference for participating in discussion online compared with the other students, making up an average of 37% of all online posts, or on average five posts a week, even though they only made up an average of 16% of the unit cohort. This is more remarkable as closer examination indicates that some NESB students far exceeded the five posts, and there were a small minority of NESB students who did not participate at all, or contributed very few posts. Scroggins (2001) noted that NESB students write more proficiently and confidently in e-text than western-based expectations for print-based text.

Another key indicator of the enthusiasm for using e-text for discussion was that many of NESB students were multiple visitors to the Discussion Board over the course of a week, compared with other students who had single and very 'short-span' (multiple visit within a short timeframe) visits in order to complete their postings. This demonstrates that many of the NESB students engaged with the online text and discussion more regularly than other students. Such findings correlate with Grenfell (2010) who found that Chinese students respond well to social constructivist learning principles and enjoy the sharing of past experiences and knowledge, as with Western student. Wong (2004) completed an Australian study on NESB Chinese students, which also concluded that 70% preferred student-centred learning and 65% indicated they learnt best when studying independently. Harris (2008) suggests that online engagement assists in persistence in study and ability to achieve at a higher level, as indicated by the NESB students' heightened engagement through e-text and hyperlinks that has resulted in improved results.

Further to this discussion is addressing the common held belief amongst Australian universities that Asian students perform better in rote learnt assessment (Wong, 2004). The blended format for the unit included assessment aligned with online contributions to discussion and transaction of knowledge. When considering the degree of increased online engagement and discussion for the 2011 and 2012 NESB students compared with other students, this indicates their preference for the inclusion of collaborative and peer-assisted learning in the curriculum. This reaffirms similar finding by Australian university research, including: Ramburuth and McCormack (2001); Wong (2004); Bretag *et al.* (2008); Wang and Verezub (2010); and, Kirkwood (2010).

Another indicator of strengthened comprehension by NESB students since the introduction of e-text discussion is the impressive final test results. This test was conducted online and involved 40 analytical multiple-choice questions. In 2010, NESB averaged three students in the top 10 for the test marks, in 2011 NESB averaged six students in the top 10, and in 2012 that number had improved to eight of the top 10 test marks. These test results align with the literature reviewed above relating to the NESB students (particularly Chinese students) preference for e-text and text hyperlinks as a means of engaging in discussion and independent learning (see particularly literature by: Chi, 1995; Hewings, 2001; Karrer, 2007; Clark, 2008; Gunderson 2009; Wang and Verezub, 2010). It also aligns with previous studies that indicate Asian students perform better in assessment than Western students when they memorise information with understanding and deep comprehension (Wong, 2004).

There are some limitations to drawing a significant conclusion to the above study. A longitudinal comparison of results for the introduction of blended curriculum incorporating

simulated social media would provide a stronger indication of the effects of e-text on NESB student learning for this unit. Some of the qualitative assessment data is reliant upon subjective interpretation from the unit convenor, with quantitative data drawn from raw results and online posts. There is also the consideration for the evolution of the development of the online curriculum and the improved delivery of more familiar content, and how this may affect the results. Finally, the changing landscape for English competency testing and its effect on the comprehension skills for NESB students studying in English may have an influence on results over time (Carstairs *et al.*, 2006).

7. Conclusion

It can be concluded from the above results that NESB students studying this Core Communication unit in 2011 and 2012 performed better in their assessment than the 2010 cohort, due in part to the introduction of more e-text and hypertext learning opportunities simulating social media. The 2011 and 2012 cohort studied the unit through the new blended learning curriculum, which included considerable online discussion using e-text, hypertext and multimedia. In keeping with previous research findings, the NESB students appeared to respond better to the more independent learning environment of online discussion conducted in social media mode. The use of e-text discussion in higher education communication curriculum can alleviate some of the anxiety and misunderstanding NESB students often experience when studying in English in Australian universities.

The use of online discussion simulating social media may improve NESB students' comprehension, contribute to stronger results and expand online communication proficiencies, ultimately improving elements to those employability skills that enable workers to perform at graduate-level roles.

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