

MANAGING CONFLICT IN ONLINE TEAMS: A CASE STUDY OF ONLINE TEAM LETTER WRITING IN EQUITY

TRACEY CARVER AND TINA COCKBURN*

The undergraduate law degree at Queensland University of Technology ('QUT') aims to supplement a student's understanding of the substantive law with the development of life-long skills. In the unit 'Principles of Equity' the skills developed include legal letter writing. Given the technological mobility of Generation Y students, and their preference for collaborative learning environments, a model was developed to enable this skill to be learnt and practiced in online teams. However research has shown that, being prone to conflict amongst participants, the benefits of collaborative learning may not be fully realized in virtual teams. Consequently, with reference to relevant literature, this article outlines a strategy adopted to minimize conflict in online teams, its impact on student learning experiences and conflict existence, and its implications for the development of such initiatives in the future.

I. INTRODUCTION

The majority of undergraduate students attending Australian Universities now belong to Generation Y.¹ Commonly defined as being born between 1980 and 2000, they are the first generation of students to have grown up with digital media and information technology in a developed, prolific form. 'As long as they [have] been alive, the world has been a connected place, and more than any preceding generation they have seized on the potential of networked media'.² This digital culture, to which Generation Y has been exposed during their formative years, has led to a shift in learn-

* Queensland University of Technology, Faculty of Law, Brisbane, Australia. Tracey Carver, B Bus(Accy)(Dist) LLB(Hons) *QUT*; LLM *Cantab*, Lecturer in Law. Tina Cockburn, B Com, LLB(Hons) *Qld*; LLM *QUT*; Grad Cert Ed (Higher Ed) *QUT*, Senior Lecturer in Law.

1 Diana Jonas-Dwyer and Romana Pospisil, 'The Millennial Effect: Implications for Academic Development' (Paper presented at the 2004 HERDSA Conference – Transforming Knowledge into Wisdom: Holistic Approaches to Teaching and Learning, Sarawak, 4-7 July 2004) 197. Generation Y are also known as Millennials, Echo Boomers, Digital Natives (Marc Prensky, *Digital Natives, Digital Immigrants* (2001) <<http://www.marcprensky.com/writing/default.asp>> at 5 June 2008) and the Net Generation (Don Tapscott, *Growing Up Digital: The Rise of the Net Generation* (1998); Diana Oblinger and James Oblinger (eds), *Educating the Net Generation* (2005) Educause <<http://www.educause.edu/educatingthenetgen/5989>> at 5 June 2008).

2 Scott Crittenden, 'Silicon Daydreams: Digital Pastimes of the Wired Generation' (2002) VI(2) *Virginia.edu* 1 in Oblinger and Oblinger (eds), above n 1, 2.5. See also, Claire Raines, *Managing Millennials* (2002) <<http://www.generationsatwork.com/articles/millennials.htm>> at 5 June 2008.

ing preferences as compared to prior student generations.³ Whereas prior learning experiences were dominated by texts and lectures, the didactic or ‘lecture tradition of colleges and universities may not meet the expectations of students raised on the Internet and interactive games’.⁴ Instead Oblinger has identified use of technology, experimental activities, and teamwork, amongst the predominant learning styles of Generation Y.⁵

In terms of the use of technology in an educational context, like all students, Generation Y learners engage better with materials that are meaningful or ‘anchored within their own experiences’.⁶ Nevertheless, as illustrated by phrases such as web ‘surfing’ and ‘texting’, Generation Y also value process, rather than content.⁷ Therefore it is the activity or skill enabled, rather than the use of technology per se that makes learning engaging,⁸ by making it more active or student-centred. Consequently, kinaesthetic learning styles are most prevalent in Generation Y learners⁹ – meaning that most prefer learning processes which encourage them to construct their own learning by ‘doing’ rather than simply being told. Such an experimental, discovery, or process over content, approach to learning is advocated as increasing information retention, by facilitating student participation and thus lessening opportunity for boredom.¹⁰ Relevant to teamwork, Generation Y is described as being more likely to make decisions based upon the collective experience of their peers, rather than their teachers.¹¹ They seek a sense of community: ‘to be understood, accepted, respected and included’,¹² and therefore gravitate towards cooperative learning, or group-based

-
- 3 Diana Oblinger, ‘Boomers Gen-Xers Millennials, Understanding the New Students’ (2003) 38(4) *Educause Review* 37, 38, 44-5; Barbara Costello, Robert Lenholt and Judson Stryker, ‘Using Blackboard in Library Instruction: Addressing the Learning Styles of Generations X and Y’ (2004) 30(6) *The Journal of Academic Librarianship* 452, 452-3; Diana Oblinger and James Oblinger, ‘Is It Age or IT: First Steps Toward Understanding the Net Generation’ in Oblinger and Oblinger (eds), above n 1, 2.6, 2.15; Gregor Kennedy et al, *First Year Students’ Experiences with Technology: Are They Really Digital Natives?* (2006) The University of Melbourne Biomedical Multimedia Unit 4 <<http://www.bmu.unimelb.edu.au/research/munatives/index.html>> at 5 June 2008; Begoña Gros, *The Impact of Digital Games in Education* (2003) First Monday <http://www.firstmonday.org/issues/issue8_7/xyzgros/> at 5 June 2008; Chris Dede, ‘Planning for Neomillennial Learning Styles’ (2005) 1 *Educause Quarterly* 7, 7.
 - 4 Oblinger, above n 3, 44. See also Mark McCrindle, ‘Understanding Generation Y’ (2003) *Principal Matters* 28, 30; Jason Frand, ‘The Information Age Mindset: Changes in Students and Implications for Higher Education’ (2000) 35(5) *Educause Review* 15, 24.
 - 5 Ibid, 38. Of less relevance to this article, ‘structure’ (in the form of monitoring by instructors and the provision of a supporting learning environment which scaffolds the teaching and learning process), is also identified as a learning preference.
 - 6 Marlene Le Brun and Richard Johnstone, *The Quiet Revolution: Improving Student Learning in Law* (1994) 253; McCrindle, above n 4, 30; Kate Manuel, ‘Teaching Information Literacy to Generation Y’ (2002) 36 (1-2) *Journal of Library Administration* 195, 209.
 - 7 Mark McCrindle, *The ABC of XYZ: Generational Diversity at Work*, McCrindle Research 5 <http://www.quayappointments.com.au/email/040213/images/generational_diversity_at_work.pdf> at 5 June 2008. See also, Costello, Lenholt and Stryker, above n 3, 457 (‘they are not concerned with theoretical, but with the practical’).
 - 8 Oblinger and Oblinger, above n 3, 2.16, 2.10-11; Frand, above n 4, 22-3; Gros, above n 3; Diana Laurillard, ‘Multimedia and the Changing Experience of the Learner’ (1995) 26(3) *British Journal of Educational Technology* 179, 179.
 - 9 Oblinger and Oblinger, above n 3, 2.7, 2.14; Manuel, above n 6, 195, 207.
 - 10 Michael Garry, ‘Training for the Nintendo Generation’ (1996) 75(4) *Progressive Grocer* 87, 88; Oblinger and Oblinger, above n 3, 2.6, 2.13.
 - 11 Manuel, above n 6, 208.
 - 12 McCrindle, above n 4, 29.

approaches to study that emphasise 'social interaction in the knowledge building process'.¹³ The benefits of such teaching and learning approaches are widely recognised.¹⁴ Not only do they improve student relationships, social skills and psychological development, but they also increase: academic learning and retention; cognitive development; and active engagement.¹⁵

As the proliferation of online gaming communities illustrates, whilst Generation Y exhibits a willingness to work in teams or with peers, their communities and social networks are often virtual.¹⁶ In the real world, globalisation and the physical and temporal separation of workers, has also led to an increased use of virtual teams in business¹⁷ such that in the future one's ability to effectively use technology to work in teams will be a 'taken-for-granted skill'.¹⁸ Consequently, given also that the 'half-life of information is [now] measured in months and years',¹⁹ the team-work, communication and leadership skills developed through online collaborative learning have been recognised as an important pedagogical goal²⁰ – more relevant to a student's transition from university to professional practice, than mere knowledge accumulation.²¹ Indeed, related to their preference for 'process over content', Generation Y possesses 'a strictly instrumentalist view of education' – seeing it as relevant only to providing 'the skills and knowledge necessary to get a job'.²²

-
- 13 Paul Shield, Bill Atweh and Parlo Singh, *Using Synchronous Web-mediated Communications as a Booster to Sense of Community in a Hybrid On-campus/Off-campus Teaching and Learning Environment* (2005) Australasian Society for Computers in Learning in Tertiary Education 609 <www.ascilite.org.au/conferences/brisbane05/blogs/proceedings/70_Shield.pdf> at 5 June 2008.
 - 14 David Johnson and Roger Johnson, 'Making Cooperative Learning Work' (1999) 38(2) *Theory Into Practice* 67, 71-3; David Johnson and Roger Johnson, 'What Makes Cooperative Learning Work' in David Kluge, Steve McGuire, David Johnson and Roger Johnson (eds), *JALT Applied Materials: Cooperative Learning* (1999) 23, 31-35; David Johnson and Roger Johnson, 'Learning Groups' in Susan Wheelan (ed), *The Handbook of Group Research and Practice* (2005) 441, 441-3, 458; Le Brun and Johnstone, above n 6, 291-2.
 - 15 This is achieved through discussion in which conflicting perceptions of the issue under consideration arise that, due to attempts to reconcile or justify them, are subsequently critiqued, resolved, rearticulated and reformulated by exposing and modifying inadequate reasoning and constructing new knowledge.
 - 16 Oblinger and Oblinger, above n 3, 2.11-2.
 - 17 Sooyoung Kim, 'Team Development of Virtual Teams' (Paper presented at the Academy of Human Resource Development International Conference (AHRD) Austin, Texas, 3-7 March 2004) 1018; Jessica Lipnack and Jeffrey Stamps, *Virtual Teams: People Working Across Boundaries With Technology* (2nd ed, 2000) 18.
 - 18 Marshall Poole and Huiyan Zhang, 'Virtual Teams' in Susan Wheelan (ed), *The Handbook of Group Research and Practice* (2005) 363, 380. See also, Pieter du Toit and Peter van Petegem, 'Learning Style Flexibility for Effective Virtual Teams' in Sharmila Ferris and Susan Godar (eds), *Teaching and Learning With Virtual Teams* (2006) 32, 46.
 - 19 Frand, above n 4, 17.
 - 20 Wing Lam et al, *Virtual Teams: Surviving or Thriving?* (2005) Australasian Society for Computers in Learning in Tertiary Education 357 <http://www.ascilite.org.au/conferences/brisbane05/blogs/proceedings/41_Lam.pdf> at 5 June 2008.
 - 21 Frand, above n 4, 17, 24; Donald Hanna, 'Building a Leadership Vision: Eleven Strategic Challenges for Higher Education' (2003) 38(4) *Educause* 25, 27, 30; Peter Cuttance, 'Information and Communication Technologies' in Peter Cuttance, Max Angus, Frank Crowther, Peter Hill, *School Innovation: Pathway to the Knowledge Society* (2001) Department of Education, Training and Youth Affairs Ch 4 <http://www.dest.gov.au/sectors/school_education/publications_resources/school_innovation/preface.htm> 5 June 2008; Barbara McCombs and Donna Vakili, 'A Learner-Centered Framework for E-Learning' (2005) 107(8) *Teachers College Record* 1582, 1582.
 - 22 Irving Saulwick and Denis Muller, *Fearless and Flexible: Views of Gen Y* (2006) Dusseldorp Skills Forum 7, 34 <<http://www.dsf.org.au/papers/189.htm>> at 5 June 2008.

Given these characteristics and preferred learning styles, current research suggests that, in order to ensure a more effective learning environment for Generation Y students, teaching and learning strategies must also adapt to address these preferences.²³ Consequently, it was considered appropriate to incorporate an innovative teaching and learning model meeting these preferences within the Principles of Equity unit at QUT's Faculty of Law.²⁴ This model enabled external students to form virtual teams to practice and learn the group work and letter writing skills necessary to complete an item of assessment online. Nevertheless, in constructing the model it was recognised that, whilst the learning styles ascribed to Generation Y may also apply to more mature aged students with significant information technology exposure,²⁵ it cannot be assumed that the educational preferences of all undergraduate external students are homogenous.²⁶ However, notwithstanding this, given the general benefits of active and cooperative learning, it was anticipated that the model would still positively influence the understanding and learning outcomes, of such 'other' students, whilst providing them with valuable work-related skills. Given that physically remote students often feel isolated in their learning,²⁷ it would also promote a greater sense of community, by facilitating their engagement both with their online peers and with their wider unit cohort (in the sense, described below,²⁸ that equivalent learning experiences between internal and external students were assured).

However, whilst Oblinger and Oblinger state that 'interactions need not be "in person" to be valuable and personal',²⁹ it has also been stated that even being a member of Generation Y is not 'synonymous with knowing how to employ technology based tools strategically to optimise learning experiences in university settings'.³⁰ Indeed, research has shown that, being prone to conflict amongst participants, the benefits of collaborative learning may not be fully realized in virtual teams (irrespective of its members' generational grouping). Accordingly this article, through an overview of the relevant literature, identifies the impediments to developing effective online communities of learning. In the context of the virtual team model implemented in the Principles of Equity unit at QUT's Faculty of Law, it then outlines the strategy adopted in the unit to minimize conflict in online teams in order to increase team effectiveness and positively influence student learning experience. Finally, student perceptions of the strategy's impact on conflict existence are considered, together with its implications for the development of such initiatives in the future.

23 Frand, above n 4, 24; Manuel, above n 6, 209; Dede, above n 3, 7; Costello, Lenholt and Stryker, above n 3, 452; Jonas-Dwyer and Pospisil, above n 1, 194, 200-1, 203.

24 The effectiveness of this model in addressing the characteristics and educational attitudes and needs of Generation Y learners has previously been considered in: Tracey Carver and Tina Cockburn, 'Making Law More Accessible: Designing Collaborative Learning Environments for Physically Remote Generation Y Students' (Paper presented at the Online Learning and Teaching Conference 2006: Learning on the Move, Brisbane, 26 September 2006).

25 Oblinger and Oblinger, above n 3, 2.9-10; Dede, above n 3, 8.

26 Gregor Kennedy et al, *First Year Students' Experiences With Technology: Are They Really Digital Natives?* (2008) 24(1) *Australian Journal of Educational Technology* 108,109, 117-8; Kennedy et al, above n 3, 4, 8; Oblinger, above n 3, 45; Jonas-Dwyer and Pospisil, above n 1, 194-5. Indeed this may be the case even within generations. For example, socio-economically disadvantaged or rural Generation Y students, who have been comparatively underexposed to technology and computers in the home, may not share the traditional Generation Y characteristics: Raines, above n 2; Kennedy et al, above n 3, 13.

27 Shield, Atweh and Singh, above n 13, 608; McCombs and Vakili, above n 21, 1586.

28 See accompanying text at below n 68.

29 Oblinger and Oblinger, above n 3, 2.12.

30 Kennedy, Judd, Churchward, Gray and Krause, above n 26, 117-8.

II. CONFLICT IN ONLINE TEAMS: A THEORETICAL BACKGROUND

Compared with face-to-face teams, as information is often more difficult (or takes longer) to exchange in virtual teams, such teams tend to adopt a more 'task oriented' focus – emphasising the task when communicating rather than 'socio-emotional' information exchange.³¹ The spatial and temporal distance separating online team members therefore inhibits the development of personal relationships and the building of rapport.³² Technology and team dispersion also make team processing more difficult, particularly in the forming, storming and norming stages of Tuckman's model of group development.³³ Consequently, virtual learning groups 'may not develop strong social network connections because of degraded attachment among study group members'.³⁴ Such barriers to learner interaction and 'sense of group' mean that as trust, cohesion and shared cognition in geographically dispersed groups take longer to develop,³⁵ conflict is more likely to occur.³⁶ Whilst high levels of conflict 'mitigate[s] against educationally productive discourse',³⁷ students

31 Lam et al, above n 20, 358; Kara Orvis and Andrea Lassiter, 'Computer-Supported Collaborative Learning: The Role of the Instructor' in Sharmila Ferris and Susan Godar (eds), *Teaching and Learning With Virtual Teams* (2006) 158, 167; Merrill Warkentin, Lutfus Sayeed and Ross Hightower, 'Virtual Teams versus Face-to-Face Teams: An Exploratory Study of a Web-based Conference System' (1997) 28(4) *Decision Sciences* 975, 979.

32 Harvard, Du and Xu, above n 32, 37-8.

33 Bruce Tuckman, 'Developmental Sequence in Small Groups' (1965) 63 *Psychological Bulletin* 384; (2001) 3 *Group Facilitation: A Research and Applications Journal* 66, 78. Tuckman maintains that the following phases are necessary for effective teamwork: (1) *forming* (team members get to know each other and agree on goals, tasks, roles and standards of group behaviour); (2) *storming* (conflict - resistance to group influence and task requirements - team members confront each other's ideas and perspectives); (3) *norming* (mutually accepted solutions are reached and rules, values and acceptable standards of behaviour are solidified. Team members adjust their behaviour to each other, develop trust and work 'as a team'); (4) *performing* (getting the job done). It is 'generally not possible to achieve high team performance until the group has passed through the first three stages': Rob Straby, *The Joy of Groups* (2007) <<http://www.slideshare.net/rstraby/the-joy-of-groups/>> at 5 June 2008. See also, Nicholas Michinov and Estelle Michinov, 'Face-to-Face Contact at the Midpoint of an Online Collaboration: Its Impact on the Patterns of Participation, Interaction, Affect, and Behaviour Over Time' (2008) 50 *Computers and Education* 1540, 1542; Byron Harvard, Jianxia Du and Jianzhong Xu, 'Online Collaborative Learning and Communication Media' (2008) 19(1) *Journal of Interactive Learning Research* 37, 47-8.

34 Gregory Northcraft, Terri Griffith and Mark Fuller, 'Virtual Study Groups: A Challenging Centrepiece for 'Working Adult' Management Education' in Sharmila Ferris and Susan Godar (eds), *Teaching and Learning With Virtual Teams* (2006) 131, 137.

35 Orvis and Lassiter, above n 31, 159, 161; Warkentin, above n 31, 986; Harvard, Du and Xu, above n 33, 45-7; Poole and Zhang, above n 18, 374; Kim, above n 17, 1019.

36 Poole and Zhang, above n 18, 372, 378-9 (virtual teams are more likely to experience conflict). See also, Harvard, Du and Xu, above n 33, 48; Orvis and Lassiter, above n 31, 168-9; Northcraft, Griffith and Fuller, above n 34, 137. However, whilst online teams are less conducive to maintaining an optimal level of conflict, arguably some form of conflict is required to promote the augmentation and reformulation of ideas necessary to achieve the deeper learning and cognitive development resulting from cooperative learning discussed at above n 15 and accompanying text: Jim Hewitt and Marlene Scardamalia, 'Design Principles for Distributed Knowledge Building Processes' (1998) 10(1) *Educational Psychology Review* 75, 87; Mitzi Montoya-Weiss, Anne Massey and Michael Song, 'Getting It Together: Temporal Coordination and Conflict Management in Global Virtual Teams' (2001) 44(6) *Academy of Management Journal* 1251, 1252, 1259.

37 Hewitt and Scardamalia, above n 36, 86.

in cohesive groups will be more motivated to share information, depend on others, and spend more time engaging in meaningful dialogue and team contributions.³⁸

‘The perceived distance between learners and other team members, contributes to fears of contributions ... left unnoticed’,³⁹ or ‘communication anxiety’. This occurs due to the absence or delay of an immediate response or feedback, upon submission, as to an idea’s value to other group members.⁴⁰ Feelings of isolation and vulnerability, when combined with delays in communication, give rise to a greater potential for team members to be, or be perceived to be, anonymous or ‘free-riding’.⁴¹ Indeed virtual team members are more likely to draw negative conclusions regarding other members’ behaviour. For example, Poole and Zhang⁴² state that a member who does not respond to emails is more likely to be ‘assumed to be uncommitted to the team, and the possibility that there [is] a technical problem’ is not considered.

Other communication problems, which commonly give rise to conflict in virtual teams, include:

- Poorly co-ordinated work logistics, and difficulties with role allocation and leadership;⁴³
- Unrealistic or unequal expectations;⁴⁴
- Lack of project visibility – which occurs where team members understand their individual tasks, but fail to see how they fit into the whole project;⁴⁵ and
- A failure to share information about team members’: contexts, schedules, constraints⁴⁶ and communication preferences.⁴⁷

‘Virtual communication may hamper the development of transactive memory’ or ‘the capacity of group members to know who in a group knows what’,⁴⁸ or in which person a particular expertise lies. Consequently, there is often insufficient disclosure of individual skills, knowledge and strengths amongst members.⁴⁹ Differences in the way text and speech are processed, and the common absence of aural and visual cueing to convey subtle meanings,⁵⁰ mean that misunderstanding

38 Rashmi Assudani, ‘Learning in a Geographically Dispersed Context: Building a Community of Learning in a Dispersed Space’ in Sharmila Ferris and Susan Godar (eds), *Teaching and Learning With Virtual Teams* (2006) 110, 121; Orvis and Lassiter, above n 31, 167.

39 Margaret Bailey and Lara Luetkehans, ‘Ten Great Tips for Facilitating Virtual Learning Teams’ (Paper presented at the Proceedings of the Annual Conference on Distance Teaching and Learning 1998, Madison, Wisconsin, 5-7 August 1998) 19.

40 Hewitt and Scardamalia, above n 36, 87; Poole and Zhang, above n 18, 367; Shield, Atweh and Singh, above n 13, 609; Kim, above n 17, 1020.

41 Northcraft, Griffith and Fuller, above n 34, 137-8; Lam et al, above n 20, 358.

42 Above n 18, 372. See also, Catherine Cramton, ‘The Mutual Knowledge Problem and its Consequences for Dispersed Collaboration’ (2001) 12 *Organization Science* 346, 359.

43 Kim, above n 17, 1020; Orvis and Lassiter, above n 31, 165.

44 Kim, above n 17, 1020; Assudani, above n 38, 121.

45 Kim, above n 17, 1019.

46 Diane Boehm and Lilianna Aniola-Jedrzejek, ‘Seven Principles of Good Practice for Virtual International Collaboration’ in Sharmila Ferris and Susan Godar (eds), *Teaching and Learning With Virtual Teams* (2006) 1, 21; Cramton, above n 42; Kim, above n 17, 1019.

47 Assudani, above n 38, 121.

48 Northcraft, Griffith and Fuller, above n 34, 138.

49 Assudani, above n 38, 114, 121.

50 Warkentin, Sayeed and Hightower, above n 31, 978. Shield, Atweh and Singh, above n 13, 609; Hewitt and Scardamalia, above n 36, 87.

and miscommunication are more likely in online teams, and are often less detectable.⁵¹ In addition to differing communication styles, culturally diverse teams must also deal with differences in cultural values and conflict management styles.⁵²

While in some cases also applying to face-to-face teams, as the above effects are stronger the more virtual the team,⁵³ the literature suggests that the development of social relationships, trust and shared knowledge may be facilitated amongst online team members if periods of face-to-face contact are also established.⁵⁴ In particular, at least an initial face-to-face meeting may foster 'sense of group' by allowing members to literally 'put a face to a name'⁵⁵ and better get to know each other before working on the task.⁵⁶ Additionally, in order to soften the communication and relational problems facing online teams, it is considered necessary to provide dispersed learners with a variety of communication tools from which they might select the mechanism most suited to the circumstances and preferences of the group and the task at hand.⁵⁷

Synchronous tools (such as chat rooms, instant messaging, teleconferencing, web conferencing, skype and telephone) can be alternatives for team members, unable to meet face-to-face, to develop a sense of belonging and facilitate trust-building.⁵⁸ By enabling members to meet and accomplish goals in real time, they are able to develop a greater sense of social presence, or community, than possible with asynchronous forums.⁵⁹ Synchronous tools also allow for some aural and/or visual cueing. Consequently, they are useful for immediate feedback, negotiation and decision making, and the addressing of emotional conflict.⁶⁰ Alternatively, as asynchronous tools (such as threaded discussion forums, email, wikis and file servers) are not time dependant,⁶¹ they provide greater flexibility for people working across time zones.⁶² Whilst synchronous tools allow for more spontaneous discussion, asynchronous communication methods provide for more thoughtful, considered, reflective or deep discussion and learning.⁶³ Asynchronous forms are also more likely to allow a history, or record, of the team's discussions to be kept over a period of time. This facilitates mutual understanding regarding the project, by affording access to previous discussions, and is particularly useful for team members not present at the time the discussions occurred.

51 Harvard, Du and Xu, above n 33, 39; Northcraft, Griffith and Fuller, above n 34, 137; Kim, above n 17, 1019; Poole and Zhang, above n 18, 379; Montoya-Weiss, Massey and Song, above n 36, 1259.

52 Poole and Zhang, above n 18, 366.

53 Ibid, 364, 367.

54 Assudani, above n 38, 124; Michinov and Michinov, above n 33, 1541-2; Harvard, Du and Xu, above n 33, 47; Kim, above n 17, 1021.

55 John Biggs, *Teaching for Quality Learning at University* (2003) 219.

56 Poole and Zhang, above n 18, 369; Warkentin, Sayeed and Hightower, above n 31, 986-7, 990.

57 'Students offered a variety of communication media within a course will choose those they deem necessary based on the needs of the group. The choice of media cannot be forced.' Harvard, Du and Xu, above n 33, 45. See also, 38, 43-4; Bailey and Luetkehans, above n 39, 21; Assudani, above n 38, 123-4; Kim, above n 17, 1020.

58 Michinov and Michinov, above n 33, 1541; Harvard, Du and Xu, above n 33, 47.

59 Harvard, Du and Xu, above n 33, 43.

60 Ibid, 47; Bailey and Luetkehans, above n 39, 21.

61 Harvard, Du and Xu, above n 33, 44.

62 Biggs, above n 55, 219; Lam et al, above n 20, 357.

63 Lam et al, above n 20, 358; Warkentin, Sayeed and Hightower, above n 31, 976-7.

Given the challenges faced by virtual teams, educators need to actively encourage effective interactions between learners.⁶⁴ According to Lam, Chua, Williams and Lee,⁶⁵ 'the performance of a virtual team is not only a function of the intellectual ability of its members, but also the extent to which the members have learnt how to work effectively as part of a virtual team'. Teaching teams also need to monitor their virtual students and be prepared to assist team members in times of conflict or confusion.⁶⁶ 'If they intervene where there are problems between learners, instructors have a chance to reverse the potentially negative effects of computer-supported environments and can better manage barriers to learner-learner interactions'.⁶⁷ Obviously however, teams will work more effectively if strategies are implemented, as part of the teaching and learning structure, to minimise the potential for conflict to occur.

III. THE MODEL AND CONFLICT MINIMISATION STRATEGIES IMPLEMENTED

As the above literature illustrates, in order to minimise conflict in online teams the primary objective for educators must be to create a virtual environment that facilitates team members to learn how to develop the mutual trust, cohesion and common knowledge ultimately necessary for effective work. In the context of the virtual team model implemented in the Principles of Equity unit at QUT's Faculty of Law, this part therefore outlines the strategy adopted in the unit to minimize conflict in order to increase team effectiveness and positively influence student learning experience.

In accordance with University policy, which requires courses to develop employment related skills appropriate to the particular discipline,⁶⁸ teamwork and legal letter writing skills theory and practice is incorporated at various stages in the Equity unit's lecture and tutorial program. As part of this module, for 20 per cent of their total marks, students are required to write, in teams of four, a jointly assessed client focused letter of advice in relation to a specific legal scenario. Students studying the unit internally to the University are provided with the opportunity, during semester weeks two to five, to engage in preliminary teamwork exercises and work on their letter. Therefore, in order to preserve the integrity of the skills program, and to ensure like learning experiences, it was important that external (or off-campus) students be provided with a similar opportunity. Consequently, it was initially compulsory for external students to attend an attendance school in order to engage in this aspect of their skills development. However, given that attendance is not always possible, in 2006 students were offered an optional alternative. For the reasons outlined above,⁶⁹ this was achieved through the development and implementation of a model enabling students to form and, for four weeks, work together, in virtual teams to practice and learn the teamwork and letter writing skills necessary to complete their assignment online.

64 Orvis and Lassiter, above n 31, 162, 170.

65 Above n 20, 359.

66 Elizabeth Stacey, Karin Barty and Peter Smith, *Designing for Online Communities of Learning* (2005) Australasian Society for Computers in Learning in Tertiary Education 634 <http://www.ascilite.org.au/conferences/brisbane05/blogs/proceedings/73_Stacey.pdf> at 5 June 2008; Bailey and Luetkehans, above n 39, 21; Richard Felder and Rebecca Brent, *Groupwork in Distance Learning* (2001) <<http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Columns/FAQs-3.html>> at 5 June 2008.

67 Orvis and Lassiter, above n 31, 163.

68 See eg, *QUT Learning and Teaching Plan 2007-2011* (2007) Queensland University of Technology, Objective 3 <<http://www.frp.qut.edu.au/frp toolkit/corpplan/strategic.jsp>> at 5 June 2008.

69 See above n 23-28 and accompanying text.

In 2007, after the model was successfully trialled, all external students were required to complete their assessment in online teams. Additionally, given that some teams were previously observed to experience problems, or conflict (arising for example from: initial team formation; lack of communication between members and/or consensus in reaching decisions; ‘free-riders’ (or the perception of a lack of valuable contribution from team members), and differing schedules and preferences as to online communication methods), in 2008 attention was paid to emphasising existing, and incorporating within the model new, procedures and structures to help coordinate and control team member activities, and increase communication, trust and rapport. Assisting students to learn how to develop the skills necessary for effective virtual teamwork is particularly important where, as in this case:

- Students have not been exposed to virtual teams (at least as part of their law degree) before;⁷⁰ and
- Teams are assigned a limited term, single-time, task⁷¹ and are consequently more likely to develop the task focused communication response discussed earlier,⁷² instead of working to share relational information by getting to know each other and thus developing viable team relationships.

A. *Strategies Implemented*

Prior to the commencement of the team letter writing project, in semester week one students allocated themselves to a virtual team on the unit’s ‘Blackboard’, or online teaching, site – choosing from among a numbered list of pre-determined groups, some spanning fixed major geographical regions (for example, Brisbane, Sunshine Coast and Gold Coast). So that students might also form more discrete geographical groupings of their own, they were provided (on the team enrolment page) with a discussion forum on which to post messages identifying their location and nominating a team for similarly located students to join. Like internal teams, virtual team numbers were capped at four given that in ‘online environments, larger groups are less productive and have more difficulty arriving at consensus’.⁷³ The option to create teams of geographically proximate members aimed to facilitate their greater integration and socialisation, by allowing for face-to-face meetings.

Once enrolled in a team, members had access to their own private group work area – containing a mixture of synchronous and asynchronous tools (including a chat room, group email link, file exchange and threaded discussion forum) – within which to work, communicate and post documents. Each group also had access to a ‘Tasks Area’ hosted on the unit’s main Blackboard Site, which specified the objectives for each week of the assignment project and stepped students through the tasks (described below) set to help develop a ‘sense of group’ and complete their assessment. Students were also given access to ‘Teamwork Materials’, consisting of a talking PowerPoint presentation outlining: the assignment (its criteria and desired outcomes), traits of effective teamwork;⁷⁴ and conflict resolution and prevention strategies (such as: effective and inef-

70 Harvard, Du and Xu, above n 33, 39; Poole and Zhang, above n 18, 380.

71 Poole and Zhang, above n 18, 369. They state that whilst “‘swift trust’ can form in virtual teams faced with pressure to complete their tasks in a relatively short time ... [such trust is] very fragile’ and can be easily broken (at 374).

72 See above n 31 and accompanying text.

73 Bailey and Luetkehans, above n 39, 22.

74 Based on the theory outlined in Graham Gibbs, *Learning in Teams: A Student Guide* (revised ed, 1994).

fective ways of disagreeing or criticising; and working with diversity and different learning styles or personality types).

As 'it is not only important to recognize the geographic distance between individuals, but also how these individuals 'feel' the distance between themselves by virtue of their familiarity with each other',⁷⁵ teams were set various tasks to encourage the development of trust, cohesion, common knowledge and consensus. In turn it was desired to reduce online members' feelings of isolation, uncertainty or frustration, which often manifest in conflict.⁷⁶ During week one team members were asked to post personal information, including their contact details, schedules and preferred communication or meeting methods and times, as the first contribution to their team's discussion forum. Subsequent weekly tasks included resources and preliminary exercises to encourage each team to:

- Set ground rules for group communication and behaviour, develop conflict and decision-making strategies; and share information as to the strengths, weaknesses and expectations of individual team members (week two); and
- Allocate tasks, deadlines and group roles and responsibilities (week four).

Additionally, given the project's short-term nature, it was necessary for students to build trust early.⁷⁷ Consequently, in week two students were asked to divide the questions set for that week's tutorial between their group members and work on them in their virtual teams. This not only encouraged students to begin their team interactions early, but also enabled them to informally test the norms, protocols and methods of communication previously agreed upon, in relation to their team, before commencing their assessment.

Teams were monitored by staff in an attempt to ensure all members' contribution, and to enable the provision of online feedback, as necessary via announcements on the main Blackboard site. Staff were also available, if desired, to help students resolve team conflict. Prior to the project's commencement, students were sent an email including a description of the activity and tips for being a successful online team member. Additionally, throughout the project students were periodically emailed regarding the weekly tasks required. The setting of incremental goals and the sending of regular 'reminders' aimed to both: sustain team participation and discourage anonymous, absent or 'free-riding' members;⁷⁸ and advise students of the virtual team skills and processes required to increase team effectiveness.

When an instructor provides learners with:⁷⁹

structure and guidelines for how to work together early in the team's tenure, they are helping group members develop shared cognitive structures of how they should interact with one another. Learners who do not receive this information will be less likely to have a shared understanding of interaction and will take longer to determine how to work together.

The aim therefore, was to make resources and opportunities available to facilitate the implementation of communication and coordination strategies in order to minimise the potential for virtual team conflict.

⁷⁵ Assudani, above n 38, 124. See also 125.

⁷⁶ *Ibid.*, 120-2; Orvis and Lassiter, above n 31, 165-6; Poole and Zhang, above n 18, 378.

⁷⁷ Poole and Zhang, above n 18, 366, 369.

⁷⁸ Bailey and Luetkehans, above n 39, 21; Lam et al, above n 20, 359; Poole and Zhang, above n 18, 378.

⁷⁹ Orvis and Lassiter, above n 31, 166.

IV. EVALUATION

In order to measure the effectiveness of the strategies developed and implemented in the Principles of Equity unit at QUT to minimise conflict in online teams, an evaluation was conducted using quantitative and qualitative data collection methods to analyse student perceptions on the impact of the strategies' use on learning experience and conflict minimisation. After engaging in the team letter writing project, students were asked to reflect on their participation and then complete and submit responses to an online survey. One hundred and three responses were received.

Quantitative data was firstly captured through the use of a rating survey question.⁸⁰ Possible responses were: *very useful*; *useful*; *not useful*; and *I did not use this strategy*, and students were asked to rate the usefulness of the following strategies in managing group expectations and preventing conflict in their team:

1. Enrolment in a team of geographically close members.
2. Use of the Online Discussion Board for group selection.
3. The Week 1 Task – Exchanging contact details, preferred communication methods, meeting times and schedules.
4. The Week 2 Task – Setting ground rules, developing conflict and decision-making strategies, sharing strengths and expectations.
5. The Week 2 Task – Completing the week two tutorial questions online in your team.
6. The Week 4 Task – allocating tasks, deadlines and group roles.
7. Access to, and monitoring of teams by, academic staff.

A second question asked students to consider, if there was conflict in their team, at what stage did it arise? Students were asked to select all of the following that applied:⁸¹

1. Allocating to a team and sharing details;
2. Understanding the task;
3. Allocating roles;
4. Making decisions;
5. Solving problems – determining 'the answer' to the assignment set;
6. Completing or finalising the assignment.

In order to generate a rich description of the phenomenon under investigation, students were also asked to provide written comments in relation to:

1. How useful were the 'Teamwork Materials' in assisting you to manage group expectations and conflict in your team?⁸²
2. Was there any conflict in your team? If so what form did this conflict take?⁸³
3. If there was conflict in your team, what other resources would have been helpful in managing it, or assisting in the successful completion of your assessment?⁸⁴
4. What suggestions do you have for future students to minimise conflict in their online teams?⁸⁵

80 See Figure 1 below.

81 See Figure 4 below.

82 See Figure 2 below.

83 See Figure 3 below.

84 See Figure 5 below.

85 See Figure 6 below.

Following a review of student responses to these questions, the following various themes emerged.

A *Analysis of Student Perceptions*

Student perceptions on the usefulness of the strategies implemented in an attempt to minimise virtual team conflict, together with the total proportion of students who actually used each strategy, are captured by Figure 1 below. The strategies implemented were generally widely adopted, with at least 52 per cent of students utilising each strategy suggested. Of these students, between 39 and 95 per cent rated the strategy as either *useful* or *very useful* in managing group expectations and preventing conflict in their team. Indeed the general absence of conflict was a key factor cited by students when considering what they liked most about engaging in the team letter writing project:⁸⁶

- Everyone made input into the final product without a hassle and we were all agreed with the substance of the letter.
- Everyone listened to what the other person had to say. There were debates over issues and in the end it was the majority view that the group went with. I feel everyone was courteous and everyone pulled their weight. We started early and communicated pretty well.

Consistent with the literature which indicates that practical communication problems are a key cause of conflict in online teams,⁸⁷ students considered that the most useful strategy to manage expectations and minimise conflict (with a total positive response rate of 95.1 per cent), was the enabling of efficient and effective communication by sharing information such as: contact details; preferred methods of communication; time constraints; and schedules as to availability.

- As external students, we all had different domestic arrangements and found it difficult for four people to meet at the same time. The coordination of the project was initially difficult, but as we moved through the process we identified better ways we could have coordinated our group.

This was followed (at 69.9 per cent) by strategies relevant to the coordination of work logistics such as: task and role allocation; and the setting of timelines and deadlines, and (at 65.1 per cent) by taking measures to manage expectations by: agreeing on ground rules; developing decision making and conflict resolution strategies; and sharing strengths and weaknesses.

- By identifying each member's strengths and weaknesses, our team was able to allocate roles to each member effectively.
- The information was useful in giving me the ability to manage expectations and realise that if conflict arises to try and resolve it in a mature way, focusing on the assignment rather than our individual opinions.

In relation to students practicing their virtual teamwork by engaging in the week two tutorial questions in their teams, prior to embarking upon the assignment question set,⁸⁸ the total positive student response rate of 51.5 per cent, is again consistent with the literature.⁸⁹ This suggests that starting off early with easy projects, or activities that allow for the development of skills outside the

86 In addition to the questions listed at above n 80-85 and accompanying text, students were also asked to comment upon 'what I liked most about working in my team to complete the letter writing exercise in Equity was ...'.

87 See above n 43-47 and accompanying text.

88 See discussion at above n 77 and accompanying text.

89 Ibid. See also Kim, above n 17, 1020; Bailey and Luetkehans, above n 39, 22; Orvis and Lassiter, above n 31, 169.

actual task set, can be effective in fostering trust and cohesion, and in testing established norms. Indeed this was reflected in student comments:

- I found these resources most valuable in helping our team to establish what we will expect from each other. Even doing the week two tutorial question was a way to see how people work – ie it was clear that one team member in particular like dividing tasks more than others, so she naturally took on more of a leadership role.
- By the end of the second week, everyone was 'on-board' with what needed to be done and how everyone else felt about working together via the 'How I am in Groups' proforma. My feeling is that stating expectations up-front through this proforma was quite critical to the attitude of the group from the start.

According to Figure 1, approximately 48 per cent of students did not employ the strategy of enrolling in geographically close teams and 46 per cent did not use the discussion board for this purpose. Consistently with studies that have shown that student virtual teams *can* be effective without face-to-face meetings,⁹⁰ the fact that students did not seem to appreciate, or take up, the option of working in geographically proximate groups (nor find the discussion forum established for this purpose very useful in preventing conflict), might be due to the fact that for these students technology does sufficiently replace face-to-face communication. Reasons for this perception include:

- External students may have learning preferences which favour flexible working conditions, such that meeting face-to-face may prejudice the 'primacy of convenience' placed upon their chosen mode of university enrolment;⁹¹ and
- Generation Y students and external students generally, as frequent users of synchronous and asynchronous tools, such as chats and discussion forums, may not consider face-to-face meetings necessary to build rapport, trust or 'sense of group'. They may have also developed alternative ways of conveying 'richer' meaning in their online messages – such as using emoticons to replace verbal and aural cueing. Indeed Warkentin, Sayeed and Hightower⁹² found that:
[R]elational links were stronger in groups whose members reported more frequent use of the WWW than other groups. Being familiar with the WWW may allow frequent users to concentrate on their interaction with other group members rather than on the system itself.

Interestingly, however, careful team selection, including the use of the discussion forum to find geographically proximate team members so as to enable the possibility of face-to-face meetings, was suggested by 16.5 per cent of respondents when asked how future students could minimise virtual team conflict.⁹³

The survey results which indicate that 43.6 per cent of students did not access academic staff support, reflect the experience of the unit coordinator in managing the online team letter writing project. Very few students made contact during the exercise and communication received related mostly to issues of substantive law. Relevant to virtual team dynamics, communication from students concerned: requests for assistance to establish initial contact with team members; advice as to whether a missing team member had discontinued their enrolment; and two occasions of reporting of free-riders and miscommunication and overbearing behaviour, respectively. In all

90 Montoya-Weiss, Massey and Song, above n 36. See also, Poole and Zhang, above n 18, 371-2; Michinov and Michinov, above n 33, 1541-2.

91 See eg, Northcraft, Griffith and Fuller, above n 34, 135.

92 Above n 31, 987.

93 See Figure 6 below.

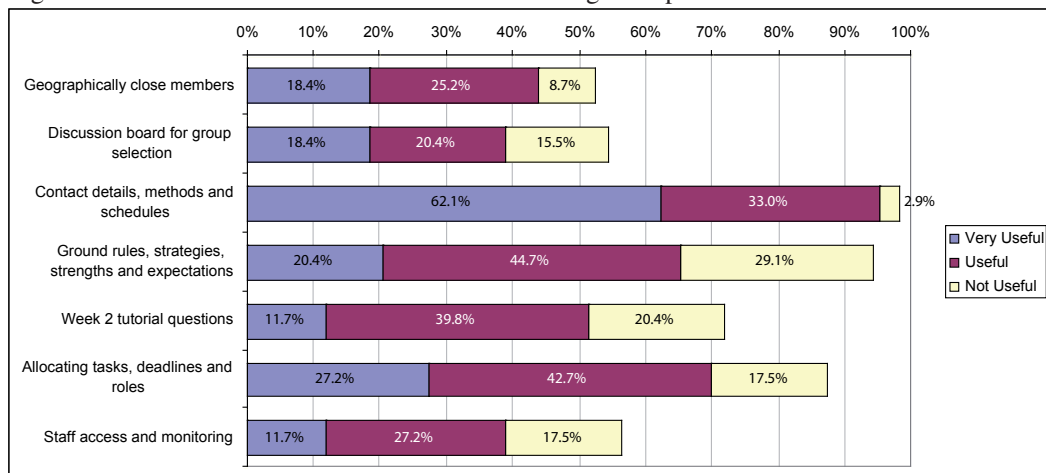
instances, teams subsequently worked together to either resolve or work around these issues and there was no further contact or concern expressed to staff. It may be that a key reason for not seeking the assistance of academic staff was that very few teams experienced conflict that they were unable to resolve quickly themselves. Furthermore, external students may be more accustomed to working independently and taking responsibility for their own learning, without a great deal of individual contact with academic staff:

- It is a matter for each team member taking responsibility not only for their own tasks but for the effectiveness of the team.

Additionally, as the following comment suggests, students may not have expected staff monitoring or realised that each team's private group work area was being monitored:

- There was no discernable staff monitoring.

Figure 1: Students' Perceived Usefulness of the Strategies Implemented



That the 'Teamwork Materials' provided to students were considered to be very useful in managing group expectations and preventing conflict is indicated by Figure 2. This shows that 46.6 per cent of students considered the materials most useful in enabling them to better understand themselves and their team members and therefore work more effectively as a group. Where conflict did arise, 4.7 per cent of students indicated that the materials assisted in conflict resolution:

- Sorry I did not use the materials at first, I thought that I could handle the issues as they came along. However when some team members did not meet deadlines I think [the situation] got out of hand for a short time, so I referred to the material. This provided assistance to understanding the other person's perspective. About this, we got past our difficulties with the help of the material.

Figure 2 also shows that 8.7 per cent of students stated that they did not need the materials because no conflict arose – perhaps due to the other conflict minimisation strategies' effectiveness:

- Well my group actually had no conflict. This was probably because the unit encouraged ... the same strategies and tasks explained in the learning support resources about managing group expectations and team conflict. The most important thing I think was getting together and setting team expectations as early as possible.

Only 14.6 per cent of students accessing the ‘Teamwork Materials’ considered them ‘not useful’ – commonly because others in the team did not engage with the materials:

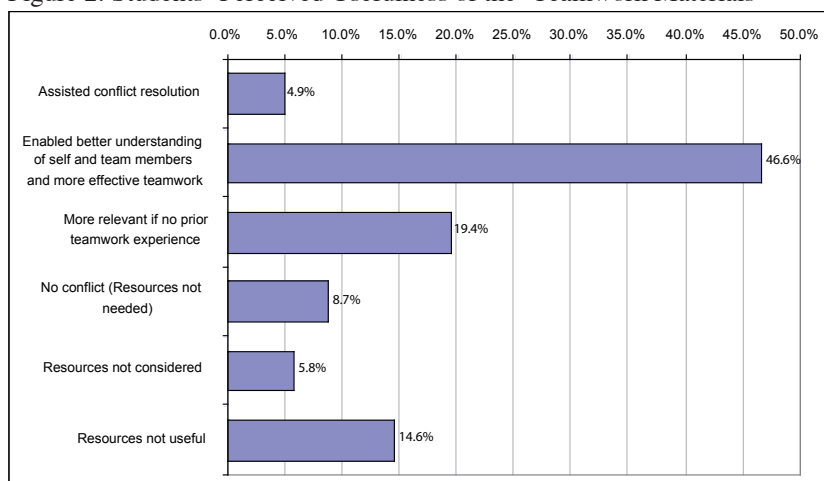
- I think that I may have been the only one in the group to look at the information. So it’s only useful if all members look at it.

An additional 19.4 per cent did not consider the materials relevant to their circumstances, particularly because they had prior teamwork experience:

- I found this information quite useful, however due to working in teams on a number of occasions I was already aware of most of the information provided.

Some students (5.8 per cent), said that they did not consider the resources at all, perhaps again because of their previous team work experience.

Figure 2: Students’ Perceived Usefulness of the ‘Teamwork Materials’



As evidenced by Figure 3 below, although the survey results indicated that approximately 50 per cent of students encountered no conflict within their virtual team, and therefore the strategies implemented may have had a positive impact on student learning experiences in the unit:

- In the end for me it was the great communication, everyone pulled their weight and everyone was agreeable on the topics.

Some students still experienced conflict. As expected, following the literature review,⁹⁴ the most commonly cited form of conflict arose due to communication problems (31.1 per cent): such as a failure to value others’ contributions (21.4 per cent); inappropriate or poor communication (2.9 per cent); and communication breakdown (6.8 per cent). For example, one student reported a:

- Small conflict with one group member taking offence at being called ‘the others’ when two of us were trying to organise things initially and work out what we would use ie: discussion board or email, and in one email one team member said ‘I will email the others and see what they want to do’. This same team member saying in a chat that two of us couldn’t attend (and had given prior notice and had submitted our draft letters), that she and the other team [member would] have to do the assignment alone as two of us had ‘family situations’. I clarified the situation in an email and stated that we only missed

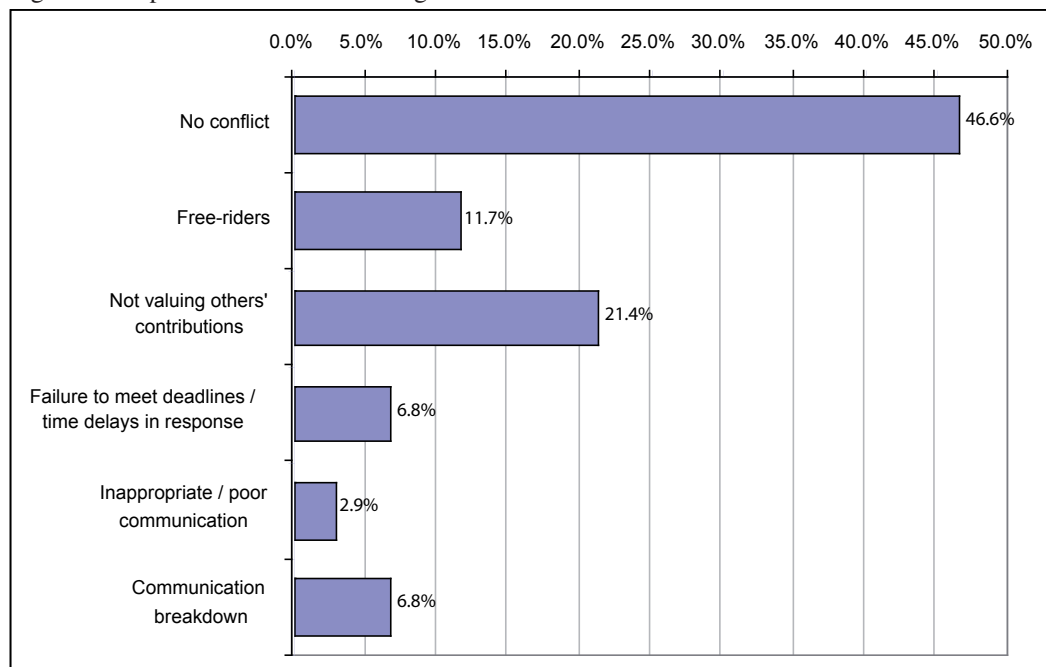
94 See above n 39-51 and accompanying text.

one meeting and were still fully contributing. I thought this was an overreaction as we had trouble initially making contact with one team member and there was no comment made about that.

The other major causes of conflict cited were: perceived free-riders (11.7 per cent);⁹⁵ and failure to meet deadlines and other time related issues such as delays in response to emails (6.8 per cent). As the literature⁹⁶ and the following student report illustrate, delayed communication response is more easily perceived as free-riding in online teams:

- Free riders – The conflict was passive, in that concerns were raised, explanations given ('IT troubles' or 'had cricket') and accepted, adjustments were made to original plans to redistribute work, problems arose again, no awareness of the issue was raised, and by then the assignment period was over, so it wasn't permitted to escalate to out and out conflict.

Figure 3: Proportion of Students Citing Common Forms of Conflict



As to when conflict most commonly arose, consistent with findings by Toribio, Laxton and Forsyth,⁹⁷ Figure 4 below indicates that in most cases (34 per cent), conflict arose when the assignment was nearing completion. Less conflict arose in the earlier stages of the project, although a total of 28.1 per cent of students considered that they experienced conflict early whilst: forming teams and sharing details (6.8 per cent); understanding the task (8.7 per cent); and allocating roles (12.6 per cent). This was to be expected following a consideration of the work of Tuckman,⁹⁸

95 This was despite the stated aim of the strategy referred to at above n 78 and accompanying text.

96 See above n 41-42 and accompanying text.

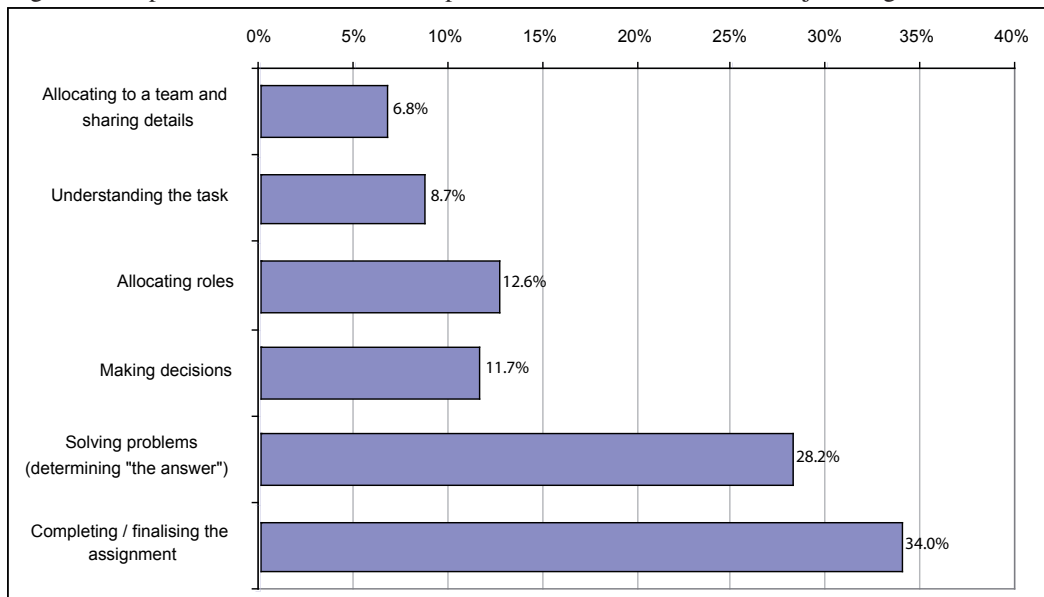
97 Jenny-Ann Toribio, Ruth Laxton and Hannah Forsyth, (2005) RL Learning Designs <<http://www.rlld.com.au/pdf/Improving%20student%20experience%20of%20virtual%20teamwork.pdf>> at 5 June 2008.

98 Above n 33.

Michinov and Michinov,⁹⁹ and Harvard, Du and Xu,¹⁰⁰ which indicate that technology and team dispersion makes team processing more difficult, particularly in the forming, storming and norming stages of group development. A large number of students indicated that they experienced conflict in making decisions and determining the answer to the problem (39.9 per cent in total). However, this may be explained as being the result of: contributions being perceived as not valued (as indicated by Figure 3 above as accounting for 21.4 per cent of conflict); or the process of expressing different views and coming to a determination, which some students may have considered to be conflict as apposed to being simply part of normal collaborative learning process.¹⁰¹ As aptly stated by one student:

- There was no real conflict that was beyond merely discussing or negotiating a mutually satisfactory response.

Figure 4: Proportion of Students That Experienced Conflict at Various Project Stages



Student responses as to what additional strategies would have been helpful to manage conflict (in Figure 5), indicate that whilst the strategies implemented to facilitate improved communication and coordination in relation to the online team letter writing project were viewed as important tools, perhaps more needs to be done in future years to ensure that students understand why these strategies are implemented and encouraged, so that more teams will access and use the resources already available. As previously noted, the strategies implemented in the Principles of Equity unit at QUT's Faculty of Law to minimise conflict in online teams included: enabling face-to-face meetings by facilitating the formation of teams amongst geographically close students; and providing a mix of synchronous and asynchronous communication tools, yet as shown in Fig-

99 Above n 33, 1542.

100 Above n 33, 47-8.

101 See eg, above n 36.

ure 5, 12.6 per cent of students still considered that additional strategies in this regard should be implemented:

- As communication is so essential to successful team work, but so hard in an external team, our team would have benefited from the ability to have face-to-face interactions via the internet. A program such as Skype would have ensured all members were up to date and on task, by all meeting in a virtual environment.

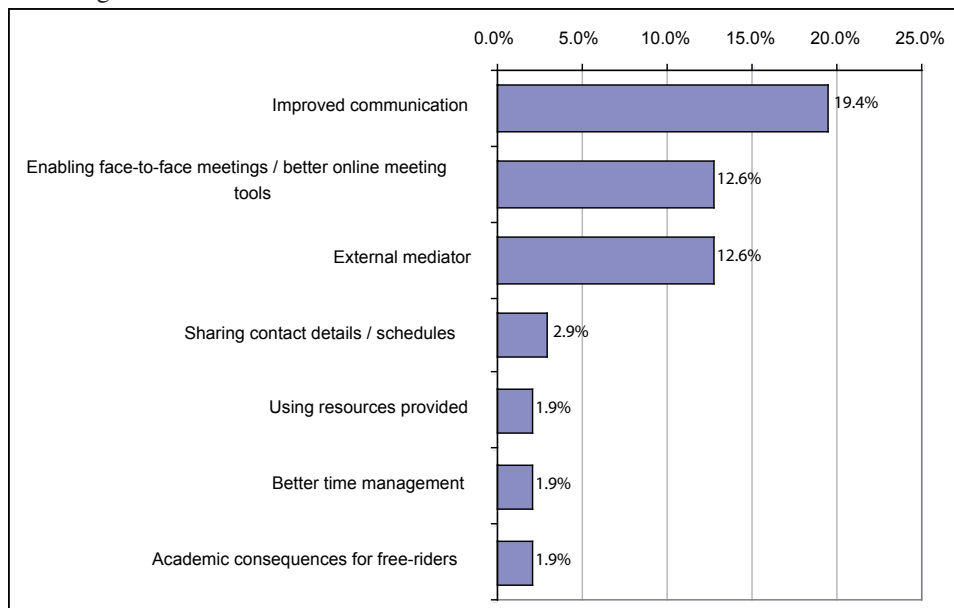
Indeed, the unit coordinator observed, when monitoring online discussion forums, that some student teams opted for alternative communication tools, such as msn messenger and skype for these reasons.

A further 24.2 per cent of students also considered that additional strategies to assist them to improve communication and team formation (sharing contact details and schedules), and better manage their time, would have assisted in minimising conflict. In the future, the 'Teamwork Materials' and week two tasks, which were intended to serve this purpose, will be reviewed and students will be expressly advised why they have been instructed to engage in these activities. Indeed 1.9 per cent of students recognised that they had been provided with resources which would have assisted, had they considered them:

- The only thing resembling conflict came from a failure to use the resources made available, not from the resources themselves.

Similarly, as previously noted, although students did not take up the option of seeking assistance from academic staff monitoring each team's private group work area, a total of 14.5 per cent of students suggested that either: an external mediator, such as academic staff member be appointed to resolve disputes (12.6 per cent); or that there be academic consequences for free-riding, enforced by academic staff (1.9 per cent).

Figure 5: Proportion of Students Identifying Additional Strategies that would have been Helpful to Manage Conflict



V. CONCLUSION

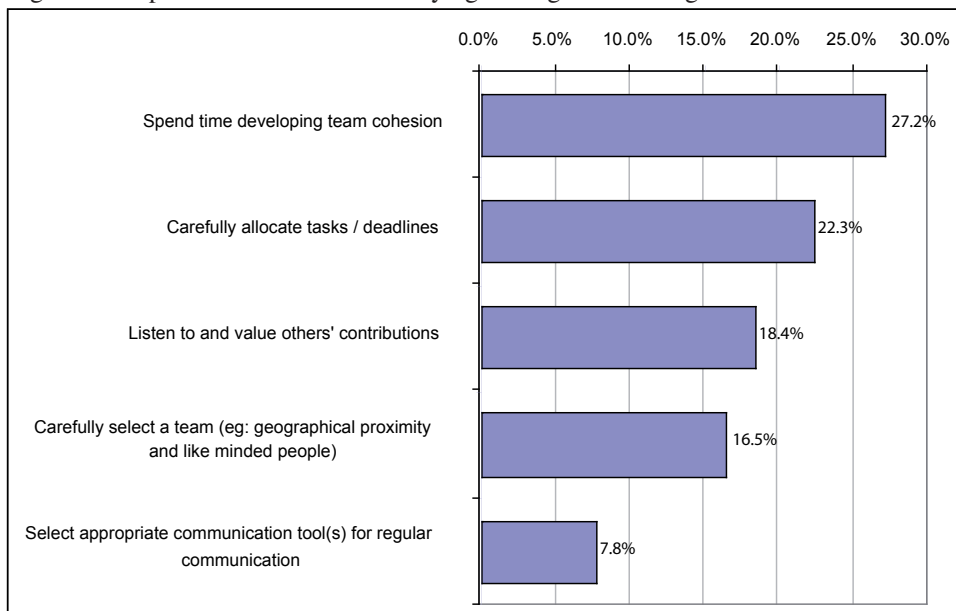
As discussed previously,¹⁰² Generation Y and external students' engagement in teamwork, or communities of learning, has many educational, social and work-related benefits. However, as stated by Assudani: 'the challenge for a team of dispersed learners lies in generating such a community in a virtual space'.¹⁰³ Because trust, cohesion and shared cognition in virtual teams take longer to develop, conflict is more likely to occur. Some level of conflict, as illustrated by the following student comment, is required to promote the argumentation and reformulation of ideas necessary to achieve the deeper learning or cognitive development resulting from cooperative learning:

- The only conflict we had as a team was 'the good kind'. We just gave each other a chance to comment on what we thought should happen and eventually came to conclusions, which were better than what they would have been if only one person had a say as they incorporated all of our individual ideas.

However, too much conflict has the potential to disrupt the information sharing and 'sense of group' necessary to achieve the social, psychological and cognitive benefits of collaboration. Therefore, the use of virtual teams raises special considerations for educators in terms of ensuring that appropriate strategies, such as those discussed in this article, are implemented as part of the teaching and learning structure, to encourage effective virtual communication and interaction amongst learners.

A summary of the strategies which should (as a minimum) be implemented, can be derived from the themes emerging from Figure 6. These themes reflect student perceptions as to how future students can minimise virtual team conflict.

Figure 6: Proportion of Students Identifying Strategies to Manage Conflict in the Future



¹⁰² See above n 6-28 and accompanying text.

¹⁰³ Above n 38, 123.

However, as students become more accustomed to working effectively in virtual teams as part of their study, the integration of such strategies to facilitate team formation and conflict minimisation may become less necessary.¹⁰⁴ Indeed, as previously discussed,¹⁰⁵ this was cited as the reason why some students did not consider the resources provided relevant to their circumstances:

- I did not really use these resources I just used the knowledge that I had gained from previous group tasks throughout my degree to help me in working through the situation. They would have been useful if I hadn't worked in a team environment before this.

104 See above n 70 and accompanying text. See also above n 65 and accompanying text.

105 See discussion of Figure 2 above.