International Masters' Student Perspectives of Team Business Simulations

ABSTRACT

Simulations proliferate within Masters' business programmes, providing learning opportunities less achievable through didactic approaches, particularly in attempting to relate business theory to practice and developing transferable skills such as time management, teamwork, communication and presentation. Student backgrounds are diverse, with tangible variation in age-band and country of origin, particularly in Western HEI settings where there is significant international recruitment from fast growing economies such as China and India. This research addresses calls for international student perspectives of business simulations, using survey of 370 Masters' students supplemented by a further smaller extended free-response survey. The findings suggest that Asian students are less likely to consider simulations as a useful route to learning or to become acquainted with other students, in comparison with their UK and European counterparts. Whilst students of all nationalities expressed difficulty in applying theory into practice, Asian students in particular voiced discomfort at the levels of student criticality expected within simulation participation. The study calls for future research into the associations between participant demographics and their preferred methods of learning based on established perspectives of simulation team participation.

Keywords:

Business simulations

International Masters' students

Team working

Introduction

Simulations are an established learning tool in Higher Education (Karns, 2006) that can enhance students' cognitive, affective and behavioural development (Neu, 2012). They may encourage student open-mindedness and consensual management skills (McCorkle, Reardon, Alexander, Kling, Harris and Iyer, 1999), thereby potentially increasing employability (Halfhill and Nielsen, 2007). They support greater understanding of business inter-functionality (Fripp, 1993) and cross-functional decision-making (Mitchell, 2004), facilitating theory application that would otherwise be difficult to achieve (Faria, Hutchinson, Wellington and Gold, 2009). Business simulations may allow decision accountability and increased learner engagement (Mitchell, 2004; Vos and Brennan, 2010), and intra-team competitiveness can enhance motivation (Crittenden and Wilson, 2006). However, empirical evidence supporting business simulation interventions is sparse and inconclusive (Chin, Dukes and Gamson, 2009), so this paper seeks to assess the successes and challenges of operating business simulations within diverse student cohorts, and to investigate the development of balanced competencies deemed crucial to entry into graduate-level employment (Chartered Management Institute, 2014).

The study considers the perspectives of international business Masters' students taking a team-based business simulation module in a UK University. It aims to gauge student perceptions regarding simulation effectiveness in the development of business competencies and the enhancement of employability.

In such learning contexts, Asian and Indian students represent significant groupings, and since previous studies have scrutinised implicit factors disadvantaging students originating beyond Western academic settings country of origin represents an important consideration. Fear of "*losing face*" may make Asian students reluctant to contribute in class

(Durkin, 2011), and this may be further compounded by deference towards educators (Turner, 2013). Asian students can exhibit diminished criticality that opposes educator intentions, which may seem like a desire to be spoon-fed memorisable knowledge (Durkin, 2011; Turner, 2013; Wu, 2015). Teamwork is more prevalent in Chinese classrooms than perhaps acknowledged by Western academics, but it is accepted that stronger students can complete work on behalf of their team (Wu, 2015), with the dominant role of lecturers potentially stifling discussion and debate (Durkin, 2011).

These students may lack linguistic skills and the associated comprehension exhibited by their peers (Edwards, Ran and Li, 2007; Gu, Schweisfurth and Day, 2010), thereby becoming only partially normalised towards the host learning culture (Marginson, 2014). Business simulations can provide authentic situations where behaviours and metacognitive beliefs evolve (Wu, 2015), which may accelerate normalisation and integration. Feedback from lecturers is crucial to international students striving to adapt (Tian and Lowe, 2013), although increasing demands for criticality may demoralise those from a Confucian tradition (Durkin, 2011). However there is potential for exaggeration of the significance of cultural factors on learning relative to individual intellectual development (Wu, 2015): Asian students can possess learning approaches indistinguishable from European students (Gieve and Clark, 2005), and some European educators perhaps over-sensitise differences.

Framed by this educational context, this study aims to:

i) Gauge Masters' business students' overall acceptance of business simulations as a strategy for learning and assessing the application of business theory;

ii) Ascertain whether they consider team-based simulations a positive and collaborative way to learn;

iii) Establish whether they consider simulations adept at preparing them for employment through the development of attributes such as team-working;

iv) Determine the extent of any demographic differences in views of the simulation and its benefits.

The remainder of this paper consists of a literature review followed by an explanation of the study design. The findings are followed by a discussion and finally a conclusion (including study limitations and suggestions for further research) is presented.

2: Literature review

2.1: Experiential learning

The drive towards learning experiences with greater authenticity (Granitz, 2001) has led business schools to move from passive to experiential learning and has oriented students towards theory application (Kneale, 2009). The ability to integrate theory with practice represents a desirable graduate attribute (Smith, Ferns and Russell, 2014). Experiential learning encourages students to critically analyse applied knowledge, create personalised meanings (Chavan, 2011) and synthesise new information with existing literature (Hamer, 2000). It also promotes social embeddedness (Hofstede, De Caluwé and Peters, 2010). Experiential learning is also useful in developing employability skills such as communication, developing appropriate levels of professional standards (Smith *et al*., 2014), being supportive of colleagues and increasing readiness to deliver superior customer service (Chartered Management Institute, 2014).

2.2: Teamwork, simulations, authentic learning and employability

Students are motivated by the realism, meaningfulness and task complexity of simulations (Williams, Beard and Rymer, 1991), thereby boosting their retention of applied

theory through repeated, inter-contextualised presentation (Bacon and Stewart, 2006). Despite the capability of passive learning to convey objective information, active learning extends the attention span of most students, thereby facilitating higher order thinking (Hamer, 2000). Simulations may permit students to choose a perspective to fit their individual learning style (Kolb and Kolb, 2012) but it is unclear whether, within international cohorts, this accommodates student diversity or perpetuates team heterogeneity. Synergy with preferred learning styles is beneficial to Western Business Schools who have long-established global recruitment beyond their own national boundaries. Effective pedagogic strategies require repeated deep learning (Bacon and Stewart, 2006) and preferably immersion in business culture (Diamond, Koernig and Iqbal, 2008). Instructional technology, such as simulations, potentially expand, expedite and simplify learning by instilling a *"real-world"* orientation (Peterson, Albaum, Munuera and Cunningham, 2002). However, the "*real-world*" business cultures to which students are oriented may be either underdeveloped or culture-specific and therefore may be less valuable to students who will return to their home country for employment. The misalignment between student and other stakeholder perceptions hinders the development of employability skills, but students can identify specific attributes that employers value such as creative, practice-led application of information (Smith *et al*., 2014), communication skills, teamwork, planning and IT proficiency (Tymon, 2011).

Teamwork is an essential skill for employability (Bravo, Lucia-Palacios and Martin, 2016; Dooley and Sexton-Finck, 2017). Many workplace teams fail due to lack of team development (Kayes, Kayes and Kolb, 2005), with particular difficulties in accommodating multiple perspectives including researching and problem solving (Bovinet, 2007). This provides an opportunity for universities to provide students with a competitive advantage (Bacon and Stewart, 2006), and participation in a business simulation gives students the chance to develop particular people-management attributes expected by employers. The

Chartered Management Institute (CMI) (2014) identifies these attributes as: team working; the ability to have "*difficult conversations*"; proficiency in managing projects; and the skills to provide persuasive opinions (written and verbal). They also state that effective graduates should be able to recognise and act on opportunities for practice improvement and self-development (Smith *et al.*, 2014). The CMI suggests employers consider communication as paramount, followed by problem solving, team development, and motivation of others. Individual and team presentations of small-scale team projects are popular with students, which is encouraging since these activities facilitate transferable skills development (Jackson, 2014). A successful simulation experience must be both interesting and able to deliver team skills development (Tiwari, Nafees and Krishnan, 2014).

2.3: Simulations, teamwork challenges and maximising simulation efficacy

Whilst many students recognise the benefits of simulation participation (Wilson, Bedwell, Lazzara, Salas, Burke, Estock, Orvis and Conkey, 2009), research on simulation efficacy is inconclusive (Vaidyanathan and Rochford, 1998). Empirical scepticism is common (Anderson and Lawton, 1997), with few simulations being tested to academic standards (Chin *et al*., 2009). Student benefits vary (Vaidyanathan and Rochford, 1998), with some students achieving only lower level cognitive learning (Anderson and Lawton, 1997). Due to the numerous shortcomings reported, critics consider simulations as superficial fun (Egenfeldt-Nielson, 2007; Chin *et al*., 2009). Practical concerns are highlighted by students, including grades, frequency of team exercises and class time allocation, perceptions of problematic peer behaviours and the appropriate use of peer evaluations (Pfaff and Huddlestone, 2003; Nguyen, Charity and Robson, 2016). Further challenges include poor team dynamics (Hansen, 2006) and specialisation of labour within teams undermining teamwork (McCorkle *et al*., 1999). "*Lone wolf"* situations may emerge, with individuals

working in isolation whilst some contribute little: "*social loafers*" allow teammates to take the strain, thus undermining teamwork validity (Barr, Dixon and Gassenheimer, 2005). Low performers may benefit less than more able students, placing pressure on those least able to cope (Hamer, 2000). Struggling students may underperform, perhaps due to low confidence, understanding, or language difficulties, but they risk attracting those destructive behaviours targeted at social loafers. Other students may have difficulty in distinguishing between these situations, hence exacerbating group problems, drastically inhibiting an underperforming student's development and damaging team performance (Freeman and Greenacre, 2011). When educators explain the difference between loafers and strugglers, inappropriate punishments and destructive behaviours reduce dramatically (Freeman and Greenacre, 2011). Failure to engage with peer evaluation mechanisms may stem from conflict avoidance, or a team may "*close ranks*" by scoring collaboratively (Neu, 2012).

Negative teamwork experiences and outcomes are rarely reported (Neu, 2012) although Kear and Bown (2015) observed disappointment, demotivation, distress, and confusion suggesting that successful teams experience fewer arguments and foster an environment of mutual assistance, open communication, and commitment fulfilment. They believed such teams use shared time effectively with members having confidence in each other's abilities, making friends, and working harmoniously by avoiding conflict and dividing work equally with mutual pride and interest - attributes also recognised by Chapman *et al*. (2010). Effective teams appoint leaders (at least implicitly), maintaining fluidity of roles in which members exchange tasks and are motivated by good grades.

Those trained in team practices usually perform more professionally and those with management skills are more likely to stabilise and unify the team (Kennedy and Dull, 2008). Hromek and Roffey (2009) list numerous student benefits including: improved learning

outcomes; conflict resolution; heightened self-esteem; criticality; motivation; empathy; and perceptions of learning. They also highlight acceptance of diversity - supported by Johnson, Johnson and Stanne (2000) - which is crucial in the context of internationally oriented student cohorts in UK and Western Business Schools. The ability to work effectively, fairly, and cross-culturally in a team is a significant attribute for student employability (Smith *et al*., 2014).

Competition can increase favourable responses to simulation games (Fortmüller, 2009), though less so for those students raised in more collectivist cultures. Student performance improves when separate courses focusing on teamwork take place as part of the overall programme input (McCorkle *et al*., 1999). The extent to which students judge a simulation to be representative of a real marketplace should be monitored closely (Garber, Hyatt, Boya and Ausherman, 2012) although this is challenging when students have little market experience. It may also be extremely difficult if students originate from countries with diverse marketplaces.

2.4: Business simulation behaviours

Students may display emotional responses to the anticipation of, and engagement with, simulations (Kear and Bown, 2015). Anticipatory emotions complement extrinsic student motivations to engage, capturing the desire for good grades and driving students to superior efforts to achieve desired learning outcomes (Hinck and Ahmed, 2015). Initial fear and confusion as the simulation starts may be an aspect of trust with the individual consenting to be vulnerable to others if their reliable performances are anticipated (Neu, 2012). Current research on the effects of heterogeneity on student team performance neglects the effects of students adopting team roles (Neu, 2012), with the focus being on the dynamics between teams rather than within teams. The least trusted team members are often allocated

low risk roles, therefore gaining least from teamwork, and in this way homophily may deprive minorities of trust-derived privileges.

2.5: Cognitive and affective consequences of teamwork and simulations

Neu (2012) explained that students might experience consequences of teamwork at odds with the intended benefits. For example, they may desire greater autonomy within their team, they may suffer feelings of injustice arising from perceptions that learning is constrained, or they may see "*grade boost*" within team assessments as an invitation to reduce their efforts. They may witness disparities of learning amongst teammates, exhibit anger at under-performers receiving inflated grades and the downgrading of over-performers, and witness the reduced likelihood of high achievers receiving individual praise and recognition (Neu, 2012). Such phenomena may be more likely in diverse teams where student contributions depend upon cultural differences, notwithstanding the necessity of graduates to realise effective cross-cultural teamwork capabilities (Smith *et al*., 2014).

Unintended affective teamwork outcomes include anxiety or apprehension through anticipation of misfortune; frustration through feeling inhibited by team mates; stress from tailoring behaviours to social expectations; disappointment where labour is perceived as inequitable; anger at real or perceived injustices within the team; and relief at having a ready-made support network (Neu, 2012). Whilst instructors should manage negative affective consequences, they should also understand positive affective consequences (Dommeyer, 2007; Aggarwal and O'Brien, 2008) which may obscure the factors inherent in simulation success.

2.6: Simulation objectives and congruence with outcomes

Simulations may facilitate students' transition from operational, reactive approaches to strategic, anticipatory approaches to discipline (Vos, 2014). Crittenden and Wilson (2006) assessed the effectiveness of marketing courses by producing one list of course material outcomes (such as student understanding of ethical issues, cross-functional integration, and strategic understanding) and another of skill development outcomes (including critical thinking, problem solving, and professionalism) which they considered related but separable criteria. The integrated methods for developing functional business knowledge provided by simulations can help counter criticisms that Business School students are predisposed to adopt "*silo*" approaches, leading to a lack of knowledge depth and insufficient development of advanced cognitive skills (Somers, Passerini, Parhankangas and Casal, 2014).

Students utilising the deepest approaches to experiential learning, who usually perceive they learn the most, normally undertake "*concrete experiences*" of doing, "*reflective observations*" upon what they have learned, "*abstract conceptualisations*" of hypothesis-driven strategies, and "*active experimentations*" of interrelated decision-making (Kolb and Kolb, 2012 cited in Kolb, 2015). Contrastingly, those with shallow learning cycles experience greater superficiality in their learning (Young, Cordill and Murphy, 2008). The interactive, trial-and-error approach of a simulation supports higher order learning (Wideman, Owston, Brown, Kushniruk, Ho and Pitts, 2007; Fortmüller, 2009), engaging students actively (McCorkle *et al*., 1999) and supporting intended outcomes like comprehension, retention, critical reasoning, communication, support, and technical skills (Williams *et al*., 1991). Whilst some question the contribution of instructional technology to learning (Peterson *et al*., 2002) many commentators believe practical application increases student enjoyment and self-efficacy (Pollack and Lilly, 2008). Simulations can bring social gains such as improved tolerance of different perspectives (Johnson *et al*., 2000) which would appear beneficial to diverse student cohorts.

2.7: Student diversity, cohesiveness and homogeneity

A key deficiency in the simulation literature is a lack of focus on issues such as diversity and heterogeneity. If international student cohorts encompass various attributes, skills, and motives (Barr *et al*., 2005) then a team-based simulation should accommodate these differences. Despite students perceiving heterogeneity within teams as detrimental to performance this is unproven and may obscure deficiencies in conflict management (Anderson, 2005). Furthermore, team cohesion, motivation, and satisfaction have not been proven reliable predictors of team performance. The possibility of electronic collaborative tools (including simulations) increasing levels of collective intelligence within a team has also not been established (Woolley, Chabris, Pentland, Hashmi and Malone, 2010).

Students may seek to achieve team homogeneity by joining others of their own nationality. Whilst age and ethnicity are not indicators of students' increased numerical understanding during a simulation, those who have studied overseas often display greater self-efficacy in this area. Gender is also influential, with women's increase in numerical understanding outstripping that of men (Brennan and Vos, 2013). Students seek to maximise their chances of employment in a globalised setting by engaging in activities such as study abroad or work placement (Fall, McDonald, Primm and Holmes, 2013). For students unable to do this, participating in a learning environment involving a diverse cohort and undertaking team-based activities is a worthy alternative. This exposure to cultural diversity helps to develop enhanced international perspectives (Chartered Management Institute, 2014) and proficiency in cross-cultural team-working (Smith *et al*., 2014).

Students working in teams engage in a complex interplay of different abilities and influences and students gauge these attributes in other team members through a combination of observation, listening and unconscious registering of nuances in vocabulary (Neu, 2012).

Increased shared goal orientation can galvanise team members (Johnson *et al*., 2007) and team cohesion, high levels of trust, and an absence of conflict all contribute to student enjoyment (Anderson, 2005). Contrastingly, internal conflict within the team can significantly reduce satisfaction (Van Kleef, Van Dijk, Steinel, Harinck and Van Beest, 2008). Regarding team formation students may want to avoid being placed with those physically nearby in the team formation session (or other arbitrary methods), instead seeking to self-select a team-specific social network of complementary members (Neu, 2012), especially for summative assessment.

3: Study design and data collection

3.1: The business simulation module

The data reported in this paper relate to Masters' students at a UK University Business School who participated in a mandatory business simulation module. The participants have a pre-simulation introduction covering the main functional and strategic inputs that underpin decision-making within the simulation, thereby providing foundations on which the simulation exercise can operate. Lectures supplement the learning experience by providing explicit links between academic theory and (simulated) practice. The lectures are particularly important because a significant proportion of these Masters' students may have never studied business and management topics in their previous University education: the programmes are of a "*conversion*" nature, recruiting participants from both business and non-business backgrounds. Co-existing with the intra-module support described above, the students are further supported ahead of the simulation through inter-module related activity based on personal development and team working brought together by means of a programme-centred residential event.

The simulation software is a commercially available 'off-the-shelf' package and relates to an international manufacturing sector. It requires decision-making relating to research and development, human resources, operations, finance, marketing, and product specification. The simulation involves four rounds of activity, each representing a year in business. The simulation runs on a workshop group basis (operating across a wider cohort of Masters' students with multiple, distinct, simultaneous simulations) with each workshop group having four teams competing against the existing market (and each other) as new market entrants. The module begins with two weeks of start-up sessions to aid team bonding, role allocation, gaining an understanding of the simulation and its background information, and developing the company vision, mission, and year-one decisions.

In assigning individual students to teams, tutors seek to balance gender, nationality, first-language, and age with team membership being non-negotiable. Workshop groups sit within the various programme cohorts, since this supports intra-team engagement and individual visibility. It also facilitates team meetings outside class contact times due to the sharing of common timetables. From a developmental perspective, it requires students within teams to step into other subject specialisms rather than being allocated to (or choosing to hide within) their own functional discipline. Students receive communication protocols covering verbal, written, and email/social media forms. Teams present their progress regularly in order to gain tutor feedback and formative peer evaluation. Given the simulation's scale and complexity, teams are expected to invest time out of the classroom to work on analysis and decision-making.

3.2: Module assessment

The first of the three module learning outcomes addresses the ability to demonstrate the development of interpersonal skills, the ability to work in culturally diverse teams, and to

make appropriate and personal contributions to team effectiveness. Within teams, students are also required to analyse and communicate complex issues effectively. The second learning outcome concerns the use of the simulation software itself, supplemented by financial analysis using Excel. The final learning outcome requires demonstration of decision-making, problem solving, and project management skills alongside acquiring, interpreting, and applying knowledge of international business, management, and organisational functions.

A two-part individual assignment (which counts for 100% of the student's module mark) assesses performance against these learning outcomes. Part one requires a report describing team performance over the simulation rounds. Students need to link business strategy to the round-by-round simulation decisions relating to prioritised Key Performance Indicators. Part one also requires an assessment of learning across the business functions against key decisions. Part two requires a critical self-assessment of the student's individual and team roles within the simulation. The actual performance of the team within the simulation does not influence module marks since grades depend wholly on student understanding and the level of critical evaluation exhibited in their assignment. The final grade contains no element of peer assessment.

3.3: Instrument development

The instrument designed for data collection in this study consisted of two sections, the first addressing student opinion of the simulation and the second collecting demographic data.

Section one consisted of 58 items measured on a five-point Likert scale (*strongly disagree* [1] through *neither disagree nor agree* [3] to *strongly agree* [5]) although not all items were used. The measurement scales were adapted from the instrument used by Nguyen

et al. (2016), capturing "*computer-based learning environments*" and "*attitude towards business statistics*". The former construct is highly relevant here since the business simulation module relies on computer-based software. This second-order construct consisted of four first-order constructs: "*student cohesiveness*", "*task orientation*", "*technology adequacy*" and "*integration*" (Nguyen *et al*., 2016). The current study uses the first three of these, with modification to the fourth to represent "*cooperation*" within the simulation. The second-order construct "*attitude towards business statistics*" (Nguyen *et al*., 2016) was re-focused to become "*attitude towards the business simulation*", retaining the supporting first-order constructs "*anxiety*" and "*enjoyment*", with the final construct becoming "*perceived usefulness of the business simulation*" after item modifications.

Section two of the instrument captured demographic data alongside statements to assess levels of familiarity with various business functions prior to undertaking the module. The final three items asked whether participants judged their experiences of business simulation to be positive, whether they considered a business simulation a positive way to learn, and finally what they considered the main difficulty of the learning process (the simulation itself, team members, or business theory). The instrument had no items related to actual team composition such as the background of other team members.

3.4: Survey data collection

Workshop attendees completed the survey in the last 15 minutes of a timetabled workshop - a pilot study had indicated it took between eight and twelve minutes to complete. The survey introduction stated that completion was voluntary and participation would have no bearing on their module mark. Distributing the survey to around thirty workshop groups over a period of two academic years generated 370 complete responses, a participation rate of approximately 70%.

3.5: Sample composition, performance and simulation perspectives

The sample exhibited an almost equal gender split, and the age profile showed over two-thirds (68%) of respondents were in the 20-24 age-band. Thirty-four countries were represented and the three countries with most representation were China, the UK, and Vietnam (37%, 14% and 12% respectively) together accounting for just under two-thirds of the survey respondents. This sample composition indicates that the findings are both representative and generalisable to the population of students at this level of study within the defined type of academic and geographic setting. The high Asian representation highlights the importance of this region to Masters' programmes in UK and other Western Business Schools. The module pass mark is 50% and actual marks achieved by students in the sample varied between 34% and 82% with a mean of 60% (SD = 7.91%, n = 347).

3.6: Instrument validation

The instrument and associated scales were validated using exploratory factor analysis. This was necessary in order to investigate the degree to which the seven first-order constructs listed in section 3.3 above were applicable in the new context. The two second-order constructs described in section 3.3 were analysed separately.

For the "*computer-based learning environment*", applying an exploratory factor analysis with principal components analysis using varimax rotation assumes the four underlying first-order constructs to be independent (Nguyen *et al*., (2016)). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.898, indicating potential factor extraction. Eight factors resulted when eigenvalues greater than 1 represented the factor extraction criterion, explaining 56.99% of the variance. The first four factors extracted (explaining 44.60% of the variance) correspond to the four first-order constructs "*student cohesiveness*", "*task orientation*", "*cooperation*" and "*technology adequacy*" (in descending

order of variance explained). Interpretation of the four remaining factors was problematic, further complicated by the appearance of various cross-loadings greater than 0.4 (but under 0.47) in the rotated component matrix. This indicates that further scale refinement would be required if subsequent model building were an objective.

For the "*attitude towards the business simulation*" construct, using principal components analysis with direct oblimin rotation assumed that the three first-order constructs "*anxiety*", "*enjoyment*" and "*perceived usefulness of the business simulation*" potentially overlap. The KMO measure was 0.861 and three factors were extracted explaining 53.09% of the variance. These three factors corresponded to the definitions above and there were no cross-loadings greater than 0.4.

Cronbach's alpha was used to measure the internal consistency of each factor and the results demonstrate an acceptable level of internal consistency for the seven scales, with each coefficient exceeding 0.7 (Hair, Black, Babin and Anderson, 2010). The measures of internal reliability are, for student cohesiveness ($\alpha = 0.860$, 9 items), task orientation ($\alpha = 0.774$, 5 items), cooperation ($\alpha = 0.884$, 8 items), technology adequacy ($\alpha = 0.763$, 6 items), perceived usefulness ($\alpha = 0.822$, 7 items), anxiety ($\alpha = 0.847$, 6 items) and enjoyment ($\alpha = 0.730$, 5 items).

3.7: Qualitative data collection

The annual nature of the programme delivery meant that any follow up qualitative data collection had to involve cohorts of learners recruited in a later academic year. Employing this type of further research permitted a detailed assessment of the study findings and development of further in-depth questions. The students involved with the qualitative study were demographically comparable to those who participated in the quantitative survey and they were studying the same Masters' programmes. Students from a number of seminar

groups were contacted with a request for voluntary individual participation in the follow-up qualitative study. This offered the students the opportunity to consider and contextualise the survey findings and to compare and contrast these against their own experiences of the business simulation. Those agreeing to take part received key aspects of the survey findings by email along with a set of associated questions. The follow up analysis presented here makes use of five of these in-depth responses (from 12 involved) and whilst not generalisable, consideration of these perspectives provides some level of triangulation.

4: Study Findings

This section presents the strengths and challenges that emerge from the survey, identifying perceptions of the simulation experience alongside differences by the principal demographics of age-band, gender, and country of origin. The survey findings are examined using statistical summary measures, percentage frequency distributions, and graphical displays. Potential associations and differences in items are assessed using non-parametric tests. The qualitative participant feedback presented at the end of the findings provides in-depth student opinion to bring an extra dimension to the quantitative results.

Table 1 presents the key survey findings, indicating high levels of endorsement for the simulation as a learning and assessment tool. There is recognition of how the individual develops as a student, the receipt and application of knowledge, and how teamwork skills are developed. Challenges have emerged, particularly in terms of demographic differences in perceptions across the diverse body of participants. Older students are generally more positive, contrasting with the relative difficulties identified by Asian students.

Table 1: Summary of Key Survey Outcomes

Learning Experience	Participant's Perception	Beneficiaries	Learners facing Challenges
Positive way to learn	Strength	European, Indonesian	Chinese, Vietnamese
Would take simulation even if voluntary	Strength	Males	
Integrating business theory	Challenge		Chinese, other Far Eastern
Cooperation and Collaboration	Strength	Older participants	Wide geographic spread
General Cooperation	Clear Strength	Older participants	
Mutual Support	Strength	Older participants	Those who believe team members were the most significant challenge in the game
Thinking about wider and multiple perspectives	Strength	None	None
Software	Strength	Younger participants	
Interpretation of aspects of output	Strength	Older participants, Europeans	Various Far Eastern participants
Teamwork	Strength	Older participants	
Getting to know team	Strength	Europeans, Indian students	Various Far Eastern participants
Employability preparation	Strength	Younger participants	Older participants

The study findings suggest a simulation can be a positive way to learn, encouraging collaboration, mutual support, teamwork, and providing an opportunity to get to know fellow students. Cooperation amongst students, particularly older students, emerges as a significant pedagogic benefit with students recognising the value of collaboration, cooperation, mutual support, and teamwork. However integrating business theory into practice is an area of student concern. Participants with negative experiences of team membership and cohesion are more likely to be less perceptive of mutual support and consequently team cohesion and individual behaviour requires monitoring by tutors.

For Asian students more used to traditional methods of classroom delivery and examination-based assessment hurdles emerge in terms of getting to know fellow team

members, in the interpretation of the simulation output, and being able to integrate theory with practice. These students are less positive regarding simulation as being a good way to learn, whereas the majority of participants were very enthusiastic and would even engage in a simulation voluntarily.

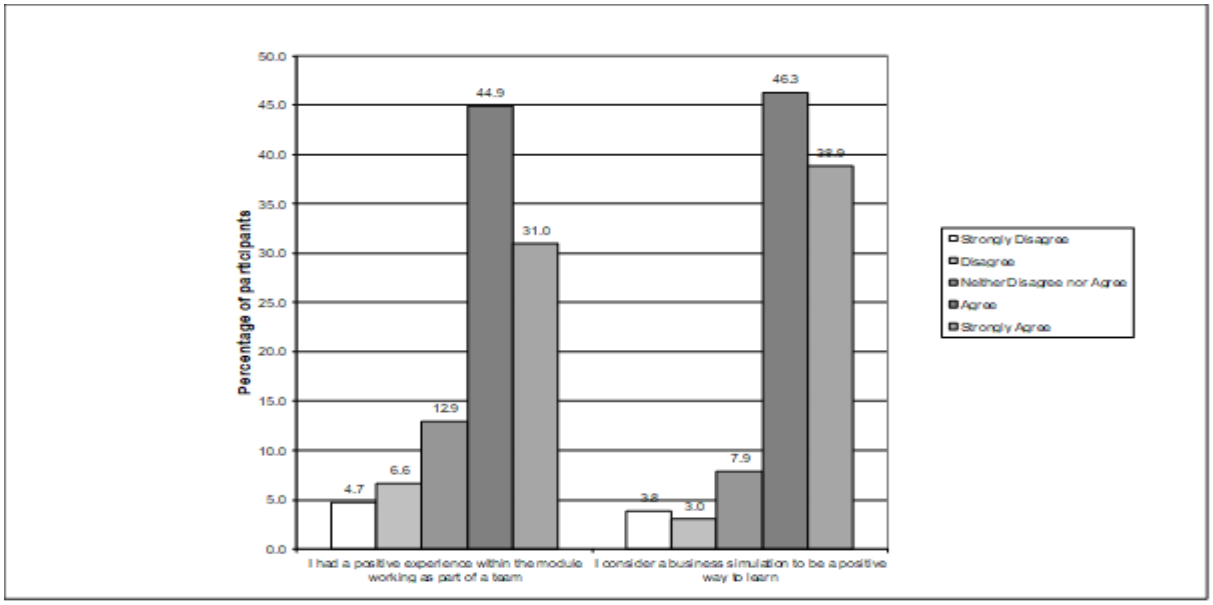
4.1: Key survey findings

4.1.1: Overall subject familiarity, simulation perception and challenges

Participants gave their initial levels of familiarity with Finance, Operations, HRM, and Marketing, with the possible responses being "*extremely familiar*", "*somewhat familiar*" and "*not familiar*". The modal response for all four functions was "*somewhat familiar*" with proportions of 42%, 60%, 58% and 47% respectively. Regarding the degree of familiarity with the use of financial statements and production reports, the "s*omewhat familiar*" option was again the modal response with 43% and 59% respectively.

Participants responded to two direct questions about their experiences of the simulation and Figure 1 presents the distribution of responses.

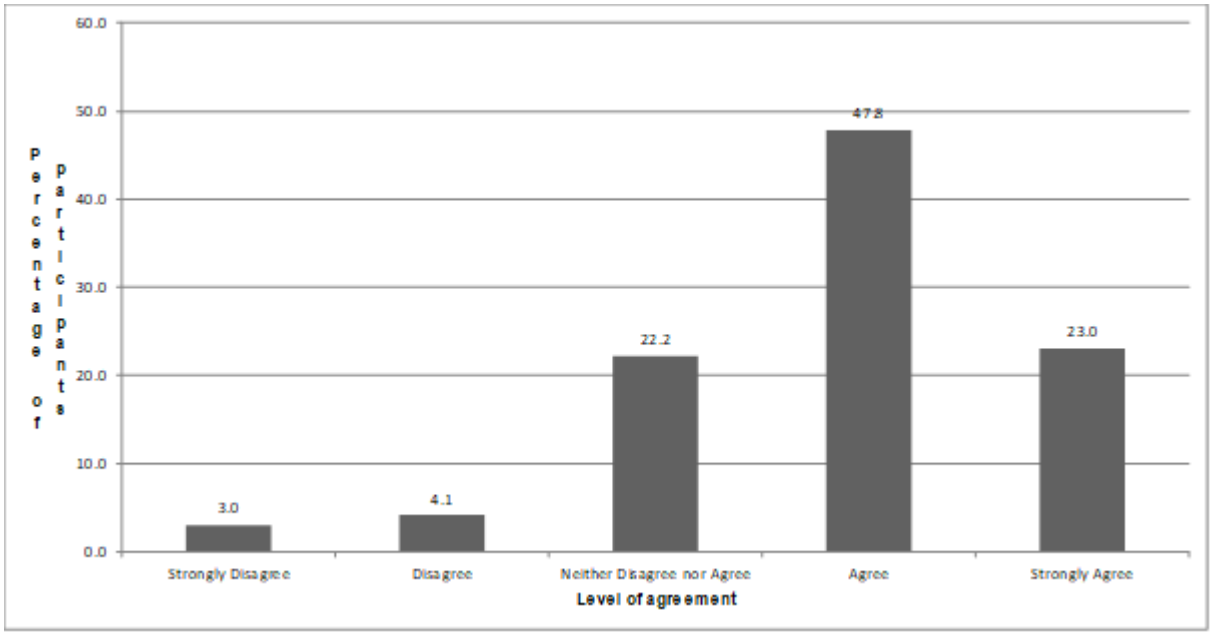
Figure 1: Participant Team and Learning Experiences



The first direct question was "*I had a positive experience within the module working as part of a team*", to which responses were positive (M = 3.91, SD = 1.06, n = 365) with 11% disagreeing. The second direct question on the survey was "*I consider a business simulation to be a positive way to learn*" and again the response was favourable (M = 4.13, SD = 0.96, n = 365) with only 7% disagreeing.

To gauge the value that participants placed on the module, the survey asked if they would opt to take the module if it were voluntary rather than compulsory. Most participants were positive (71%), whilst 7% responded negatively, as indicated by Figure 2. The responses to this question did not vary by module mark, nationality, or age showing the broad appeal of the business simulation.

Figure 2: Participants who would opt for the simulation if voluntary



The "*Business Theory*" aspect of the module was identified as being the most difficult (46%) with 31% of the participants indicating "*The Simulation*" and the lowest response was for "*Team Members*" at 24%. Participants responded to several questions relating to technology adequacy such as the ease of use of software, the condition of the IT infrastructure, and the ease of rectifying problems with either software or hardware. Responses to questions on technology were positive, with only a small proportion of participants expressing dissatisfaction with either hardware or software.

The survey suggested a significant difference in whether participants from different nationalities considered business simulations to be a positive way to learn. European and Indonesian students gave more favourable responses than their Chinese and Vietnamese peers did ($H(11) = 35.54$, $p < .01$), suggesting the latter may be less appreciative of the relatively informal learning environment employed. There was a significant association between area of

difficulty and nationality (χ^2 (6, n = 360) = 17.80, p < .01). "*Business theory*" more generally is a concern for Asian participants, compared with the "*softer issues*" for European participants who chose "*team members*" as their relatively most difficult hurdle.

In terms of subject development, significant differences emerge regarding the use of company performance data. Older participants were more comfortable using company performance data (H(3) = 9.42, p = .02) and European participants felt less nervous than those from Asia (H(11) = 50.15, p < .01).

Significant associations were found between whether participants had a positive experience within the module working as part of a team and whether they would take a simulation voluntarily (χ^2 (4, n = 365) = 20.72, p < .01) and between whether they considered business simulations as a positive way to learn and taking a simulation voluntarily (χ^2 (4, n = 365) = 25.75, p < .01). For value placed on the learning experience, a significant difference by gender (U = 13512, p < .01) exists, with males being more positive, perhaps due to their dominance in team situations (particularly accounting for the numerous nationalities represented) or the simulation context being motor manufacturing.

4.1.2: Perception of peer support

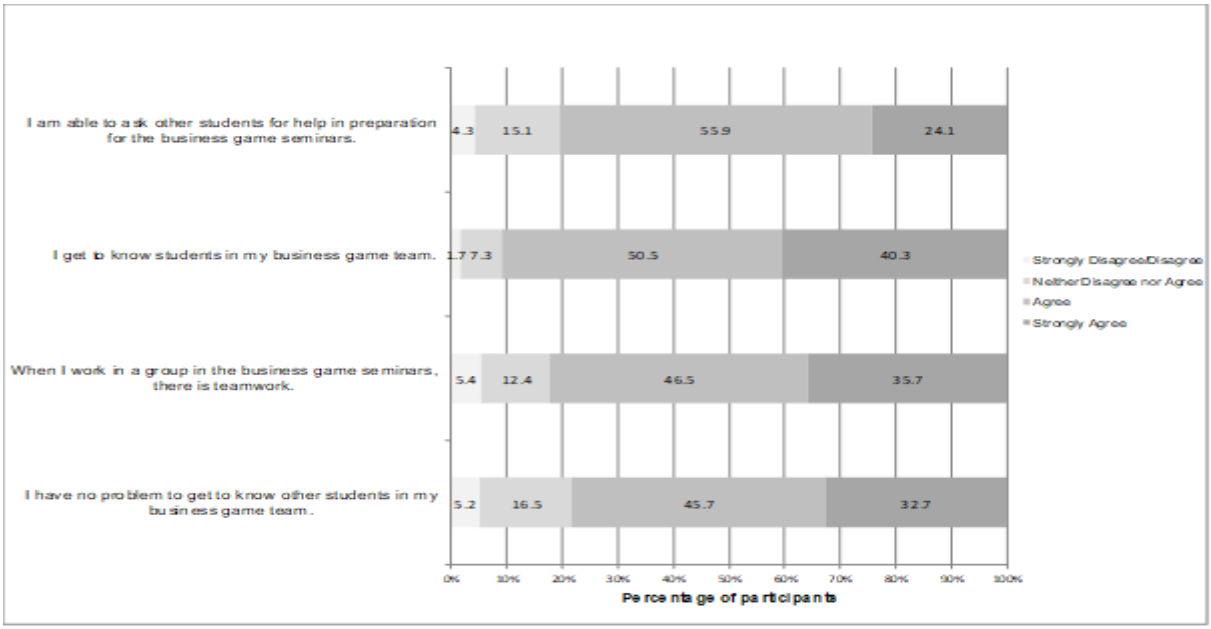
For cooperation, 72% of participants agreed that sharing resources occurred within their teams and only 7% disagreed (n = 370). Items on the survey relating to cooperation include working cooperatively, determining the level of cooperation on achieving specific goals and team cooperation in workshops and assessment. The vast majority (91%) agreed that they work cooperatively within their team, with only 1% disagreeing (n = 370).

Participants answered three questions directly related to mutual support these were: whether they agreed they had received help from peers; if they were able to ask peers for help; and whether they learned from peers during the module. The vast majority of

participants agreed with all three statements (80% agree, 5% disagree, *n* = 370; 80% agree, 4% disagree, *n* = 368; 82% agree, 3% disagree, *n* = 370 respectively). Those participants who identified "*team members*" as the most difficult part of the module (as opposed to either the "*simulation*" or "*business theory*") responded to these items less positively.

Four items provided insight into whether participants worked together and felt able to call upon each other for help. Figure 3 presents the items and the distribution of responses.

Figure 3: Level of perceived teamwork



The participants responded positively to these questions with respective means (and SD, n) of 4.06 (0.84, *n* = 370), 4.11 (0.86, *n* = 370), 4.30 (0.69, *n* = 369) and 3.99 (0.78, *n* = 369).

Opinions varied on sharing resources, cooperation and mutual support. Regarding sharing resources, older participants were more positive ($H(3) = 11.27$, $p = .01$) as were Asian participants ($H(11) = 28.93$, $p < .01$). When responses were analysed according to which element of the simulation experience participants found most difficult, significant differences were found, with those citing "*team members*" as the most challenging element scoring lowest ($H(2) = 7.02$, $p = .03$). Likewise for cooperation, experiences became more positive as a participant's age increased ($H(3) = 15.90$, $p < .01$), and students from the UK, India, Malaysia and Nigeria felt more positive about cooperation within the team compared with those from Germany, Indonesia, China and Vietnam ($H(11) = 21.57$, $p = .03$). When considering individual survey measures of cooperation, there were significant positive correlations between opinions on working cooperatively with the team and whether participants had a positive experience within the module working as part of a team ($r(363) = 0.44$, $p < .01$) and whether they thought business simulations as a positive way to learn ($r(363) = 0.27$, $p < .01$). In assessing mutual support, those participants who identified "*team members*" as the most difficult part of the simulation experience (as opposed to either the "*simulation*" or "*business theory*") scored these items significantly lower. The results were $H(3) = 29.56$, $p < .01$; $H(3) = 14.34$, $p < .01$; $H(3) = 31.60$, $p < .01$ respectively for the three associated statements. Older participants responded more positively to all three statements than their younger counterparts ($H(3) = 11.27$, $p = .01$; $H(3) = 20.53$, $p < .01$; $H(3) = 9.71$, $p = .02$).

4.1.3: Perception of development for employment and development of team working

The majority of participants believed they were encouraged to consider several perspectives of an issue (84% agree, 3% disagree, $n = 367$), and similar percentages believed the module taught them to consider how a business is run (87% agree, 3% disagree, $n = 368$).

Building on these outcomes as preparation for employment, the vast majority believed their future career would require knowledge of organisational performance data (82% agree, 2% disagree, n = 369) and very similar percentages believed the module provided them with skills they expect to use in future employment (82% agree, 2% disagree, n = 370). Participants believe that skills gained in the module have the potential to be generally useful in their business career (86% agree, 2% disagree, n = 369).

In assessing teamwork, significant differences exist in response to all four survey items (as shown in Figure 3) with respect to age ($H(3) = 12.69$, $p < .01$; $H(3) = 9.77$, $p = .02$; $H(3) = 19.61$, $p < .01$; $H(3) = 20.53$, $p < .01$). The results indicated the same pattern across the item set; the older the student the more positively they responded. With regard to experiencing little or no problems getting to know their allocated teammates, European and Indian participants responded more positively than those from Indonesia and Vietnam ($H(11) = 55.53$, $p < .01$). A significant result was obtained when participants were asked if teamwork was evident, with UK, Indian and Malaysian participants responding more positively than those from Indonesia or Nigeria ($H(11) = 38.40$, $p < .01$). When analysed by age, there was a significant difference in whether the respondents felt the module provided them with skills aligned to future employment ($H(3) = 8.78$, $p = .03$) with the oldest age-band (35+ years) giving less positive responses than their younger peers. For nationality, there was a significant difference in whether the skills gained in the module were felt to be likely to be useful for a business career ($H(11) = 22.61$, $p = .02$) with participants from the UK, India, Nigeria and Russia responding more positively.

4.2: Qualitative feedback and contextualisation of the survey findings

From a learning perspective, the ability to see the consequences of business decisions taken by the team within the simulation is considered beneficial, the simulation *"was the best*

way to find out that any decision you make in a business environment could bring significant consequences, negative or positive" (Angela - pseudonyms have been used for student names). The practical focus was appreciated: *"It was a hands-on experience"* (Beki) and the integration of theory and practice was applauded as *"a very effective way to learn "boring" content in a more fun and practical way, we feel like it is easier to learn something when it is not only theoretical, and you actually get to understand how the theoretical is applied in "real life"."* (Vale). There was also a "*novelty value*" to the simulation because *"students were captivated with it and responded enthusiastically each time data was entered into the simulation"* (Mohammad), despite some initial uncertainty and apprehensiveness: *"because it is a new method of learning, students may reject the method, initially"* (Tara).

However, the focus on practice made application of theory difficult *"since it was a hands-on experience you did not think about theories"* (Beki), to the extent that a simulation becomes the "*reality*": *"some students may have found it hard to relate business theory to the "reality" of the simulation"* (Tara). Working with unfamiliar theoretical concepts highlights challenge and value: *"all the financial terms at the beginning of the simulation scared me"* (Angela), but *"I became more confident with them ... reaching the last round with a complete knowledge of the financial part"* (Angela). The simulation proved useful for demonstrating *"more than one way to solve a problem and most problems have more than one solution"* (Beki) and teammates recognised that there were *"different viewpoints on how to succeed"* (Mohammad). There was agreement that a simulation supported understanding of how a business works, it *"was good for teaching us how to run a business and all of the different components of a business such as HR, operations, marketing and sales etc"* (Vale), especially when students hadn't studied business before.

Teamwork benefits included the opportunity to learn from peers, by drawing on the greater knowledge of others: *"I have never studied finance before and having a colleague to teach me rather than a tutor was much more 'comfortable'"* (Angela). Students developed an appreciation of diverse cultures: *"working in a multi-ethnicity team enhanced my cultural awareness and appreciation for different perspectives [other] than my own"* (Tara). Cultural diversity was welcomed: *"The group I was part of was very culturally diverse (UK, Norway, Czech Republic, Thailand, Indonesia), but because everyone took this into consideration from the very start we had a great group dynamic"* (Vale). Getting used to *"each other's cultures, mannerisms and aptitudes"* (Tara) does take some time for those who *"have not been exposed to working in a diverse team before"* (Tara). Tara recognised merit in the simulation driven by differing perspectives within the team providing a successful simulation result: *"a variety of perspectives that proved very beneficial for the outcome of the simulation"*. Negative comments regarding working as part of a team centred on frustrations with perceived disparities in contribution, leading to proposals for mechanisms allowing *"monitoring each member of the team, how much he/she is involved during the meetings and what are his/her contributions"* (Angela).

A perception of Asian students being more inclined towards independent work rather than teamwork emerges, *"the Asian culture has more of a hierarchy and lean towards more individual work [whereas] Europeans work more with groups and teams"* (Beki). Another student observed this in a wider context: *"having interacted personally with Chinese and Vietnamese peers prior to the simulation, I have come to acknowledge ... they tend to lean towards being observers and happen to be somewhat introverted compared to those from a European background"* (Tara). Vale reported, *"when speaking to fellow students from Asia they have told us that they prefer to work independently, and they are also not as used to group work and discussions in class"*. It is perhaps not surprising that English language

proficiency is prominent within the discussion: *"Asian students are not willing to get involved in group work because they think that the language barriers will prevent them perform [sic]"* (Angela).

A greater issue was the lack of contribution from team members *"we had one team member that did not contribute voluntarily and did not do much work, which was frustrating at times"* (Beki) and *"some team members were producing more work than others which resulted in direct conflict"* (Tara). Parity of contribution became more challenging when competing with alternative commitments such as part-time jobs: *"due to some team member's commitments outside of university, it was difficult to meet up regularly and create presentations and discuss the next steps for the simulation."* (Mohammad). Access to *"electronic communication and Google docs"* (Mohammad) alleviates these difficulties to some extent.

Good cooperation enabled smooth progress: *"my team work together [sic] on all parts of the game"* (Beki), making it easier to *"organise and delegate specific tasks and business areas (such as marketing, HR etc..)"* (Vale). However, one student felt that due to *"conversations with other colleagues and their teams"*, they believed that *"in every team there is a least one member that does quite nothing to contribute [sic]"* (Angela).

The participants were extremely enthusiastic in their discussion of peer support, having *"mutual support available … provides students with higher confidence in regards to the assignment and the materials learned. With knowledge sharing, everyone benefits"* (Tara). Assistance can extend beyond individual teams: *"our seminar group was very positive about supporting other teams and people within the groups"* (Mohammad). This is surprising given that the teams within a workshop group competed with each other:

"although we wanted to win the business game, we were still encouraging about supporting others and talking about decisions and why we made them" (Mohammad).

The students identified specific difficulties relating to "*loafing*". *"In my team there was a member [who was] much more interested in social media during the meetings rather than participating with us"* (Angela). Tara reported, *"there was one member that would go off a tangent from the topics in the [meeting] agenda"* and expressed dissatisfaction with a team member who *"did not trust others' work and therefore was attempting to micro manage and go over everyone's work during meetings which resulted in time wasted"* (Tara). Good communication proved essential in tackling cases where team members felt that others should be contributing more. Beki said *"we always talked to the group and if we needed someone to do something we would ask the person to do the work needed"* and team discussions enabled matters to be *"quickly resolved and no one held grudges in the group"* (Mohammad). Other strategies for tackling a lack of contribution were less desirable: *"we end up avoiding asking [the team member] to help us and we carried on with the simulation by ourselves. He never asked us to give him some tasks"* (Angela).

The qualitative data provided further insight into the specific skills that would be useful for future employment, with teamwork emerging as the most important, including *"how to deal with initiating confrontation for the betterment of the team"* (Tara) and delegation of tasks. The use of organisational performance data, coupled with analytical skills, is essential in *"understanding why your business is performing well or not"* (Angela). The simulation was seen as beneficial in developing skills in time management (Beki and Mohammad), leadership (Mohammad), public speaking (Mohammad) and organisation (Mohammad), recognising the contribution to preparation for employment.

5: Discussion

5.1: Benefits, challenges and implications for practice [objectives i) – iii)]

This study contributes to the learning and teaching agenda by focussing on Masters' Business programmes involving diverse, international student cohorts. It assesses the perceived value to such students of undertaking a business simulation and the extent to which they feel it delivers two crucial outcomes: intra-functional business knowledge development and enhanced student employability.

Positive student experiences are a clear benefit (Garber *et al*., 2012), with a majority of participants stating they would undertake the simulation module on a voluntary basis. Enabling participants to consider wide, multiple perspectives chimes with Fripp (1993) regarding integration and Mitchell (2004) with respect to developing broader decision-making skills.

Whilst favourable views regarding mutual support have emerged in this study one quarter of the participants believe team members represented the most significant challenge, and negative team dynamics are evidenced (Hansen, 2006). Whilst the process of team formation was not problematic to academic staff (Pfaff and Huddlestone, 2003) the benefits and challenges identified by Kear and Brown (2015) resonate with the respective positive and negative outcomes reported in this study. The participants reported a lack of autonomy, grade implications, free-riding, or general injustice, all reported by Neu (2012). However, by not offering the comfortable solution of self-selecting team members (Neu, 2012) students experience the dual challenge and opportunity of working in diverse teams that require broader skills to succeed (Barr *et al*., 2005). This embraces the breadth of inputs required by the simulation, avoiding role specialisation and negating wider teamwork opportunity (McCorkle *et al*., 1999). Whilst team dynamics can facilitate effective learning, excessive

explicit focus on team cohesion and role-play may undermine these benefits (Tiwari *et al*., 2014): balancing intervention with empowerment is therefore crucial.

Student views of employability preparation support Vos and Brennan's (2010) and Smith *et al*.'s (2014) findings with respect to applying numerical and financial data, with participants moving comfortably towards applying theory to practice (Kneale, 2009; Smith *et al*., 2014). However this journey is still a significant challenge for some. Simulations can develop employability skills such as leadership and work-based interaction (Hansen, 2006), thereby providing graduates with specific attributes that are often lacking (Kayes *et al*., 2005). This study highlights that a simulation may be effective in delivering people management skills such as confidence in decision-making, managing uncertainty, and risk evaluation (Tiwari *et al*., 2014) rather than the development of subject knowledge. Students recognise the enhancement of employability skills through work placements more readily than classroom activities such as simulations. Consequently there is a substantial challenge here, since the intended beneficiaries recognise these enhancements, but perhaps not to the same extent as the "*real-world*" interventions (Tymon, 2011).

5.2: The Asian student perspective [objective iv)]

Asian students appear less likely to consider simulations a useful way to learn and to come to know team members, particularly non-compatriots. They prefer instructor-led structured input and ongoing intervention (Rodrigues, 2005), partially explaining their relative difficulties in integrating business theory into decision-making and applying information to maximise team performance. Participants more familiar with an educational approach which involves identifying and reporting a "*right answer*" (Wu, 2015) can find simulations uncomfortable and this presents a challenge for Western Business Schools with diverse student recruitment. The requirement for criticality may further frustrate these

students, leading them to be more likely to consider simulations as a negative learning experience (Durkin, 2011). The failure to develop high levels of criticality is also at odds with employer expectations.

These challenges are not exclusive to Asian students. Application of theory to simulation-led practice represented the dominant challenge for half of the study participants, identifying a challenge in developing the theory-practice capability desirable in graduates (Smith *et al.*, 2014). This appears somewhat contradictory when it is known that business functions, financial statements, and product reports are "*somewhat familiar*" to participants. There is a specific challenge in ensuring students can prove their interpretation of the simulation output in the context of cross-functional links and decision-making and therefore demonstrate an ability to apply (functional business) knowledge rather than simply learn, memorise and repeat.

The decision by tutors to follow the suggestion of Wu (2015) and allocate team members to give a mix of gender, nationality, and country of schooling creates significant challenges, particularly relating to its impact on learning and achieving pre-defined outcomes (Rastall, 2006; Ramburuth and McCormick, 2001). It is beneficial not to over-emphasise supposed differences between students originating in the West and East, especially in cohorts where significant numbers represent both parts of the world (Gieve and Clark, 2005). International students of varying domiciles may exploit different identities that exist in an international learning environment (Marginson, 2014). However, this team selection strategy can hinder the primary aim of productive teamwork within the simulation experience, through compromising cooperation, collaboration, and getting to know team members. The reticence to become involved witnessed amongst some Asian students suggests unwillingness to "*lose face*" and reluctance to "*speak up*" (Durkin, 2011), preferring tutor deference (Turner 2013) and reliance on the dominant team leader (Wu, 2015).

6: Conclusion

This study has reported positively on the learning experiences of Masters' Business and Management students participating in a business simulation as a key learning and teaching intervention. They report that the simulation is a positive way to learn, recognising the benefits of working as part of a team, where team development has aided mutual support and recognition. A clear majority of participants would undertake a simulation even if the activity were voluntary. These messages strongly inform professional practice by suggesting that simulations can be an effective part of a learning and teaching strategy. They are most effective when underpinned with formal inputs that cover academic theory linked to practice and "*transferable*" skills capturing personal development, emotional intelligence, and teamwork. The findings suggest that the software application used in the intervention being assessed caused relatively few challenges to the participants, although the simulation activity is vulnerable to failure should one or more of the "*harder*" and "*transferable*" elements described above not be given the necessary attention or levels of formal intervention. The standout challenge from the survey relates to integrating business theory, suggesting that an effective simulation perhaps cannot be run as a standalone practical activity without essential start-up inputs covering business strategy and the decision-making role of the key business functions.

An important attribute of the Masters' programmes described in this study is the diverse intake of participants which offers its constituents an early experience of working in multi-national teams ahead of graduate employment. Alongside this benefit, there must be recognition that learners from different traditions have different learning and teaching experiences and expectations. As such, deploying a practice-based simulation represents a further challenge in persuading these learners of its positive benefits, primarily through integration into the team environment, given the relative challenge around getting to know

the team. The practical application of data, identified in this study through interpretation of simulation output and integrating business theory, suggests a greater hurdle for these learners is the "*harder*" aspects of their development rather than their development as individuals or team workers. These priorities represent a clear steer in further informing the enhancement and development of any curricula including a business simulation.

6.1: Study limitations

The primary limitations for this work are that we consider students at only one University, a single framework of Masters' programmes with intra-module and inter-module subject support, and one particular 'off-the-shelf' business simulation package. The simulation experiences, both positive and negative, may be particular to the software considered without any cross-comparison of alternative applications as well as to the structure of subject and assessment delivery. Cross-institutional comparison could provide an assessment of both of these considerations.

A further limitation is that peer evaluation in the business simulation is purely formative in nature. There is no summative peer assessment which, given the team aspects of the simulation experience, represents a constraint driven limitation. However, its future inclusion and assessment represent a further research opportunity. There is also potential for assessment in alternative University settings where this supports the execution of a simulation.

Methodological limitations of this exploratory investigation result from the application of a set of items derived from a previous, related study. Although the internal consistencies of the items representing the constructs are satisfactory, the ability to develop

sophisticated statistical models is limited due to the need for further refinement of the items themselves, which is beyond the scope of the study presented here.

For the qualitative data, the intention was to convene a focus group to capture discussion amongst participants but logistical difficulties led to the collection of individual email responses instead. However, these qualitative data add useful detail and provide triangulation without being able to afford any level of generalisation. The contributors came from a range of backgrounds in terms of programme of study, gender, and country of origin.

6.2: Suggestions for further research

Two possible areas of consideration in any future study are: the extent to which mixed student teams benefit in terms of enhancing their international perspectives of business by learning within diverse cohorts; the role of ethics in decision-making, given the importance placed on this by graduate employers (Chartered Management Institute, 2014; Smith *et al*., 2014). Research related to intercultural experience could be linked to both of these areas. This may involve exploration of intra-team and inter-cultural communication with consideration given to determinants of cohesive behaviours and enhanced communication (Fall *et al*., 2013). In terms of team enhancement in the broader sense consideration of the role that peer assessment offers as a solution in facilitating the development of collaborative skills and team cohesiveness (Anderson, 2005; Johnson *et al*., 2007) and reducing social loafing (Aggarwal and O'Brien, 2008) could be examined. This would address a limitation of the current study, where peer-assessment is restricted to formative interventions.

It is perhaps worth looking at the experiences of those learners who have a relatively less positive learning experience relating to the deployment of a business simulation. Based

on the survey outcomes reported in this study, this could focus on one or more of the following:

i) Learners experiencing challenges in terms of teamwork and fellow team-members;

ii) Learners experiencing problems relating to the application of theory to the practice offered by the simulation; and

iii) Learners from South-East Asia who tend to be less positive across a range of outcomes and who are perhaps more familiar with traditional approaches to learning, classroom activity and assessment.

From the ‘supply’ perspective making simulations effective learning tools is highly dependent on the educator, and therefore further examination of their perceptions of simulations is worthy of future research (Tiwari *et al*., 2014). Consideration of their experiences of delivering relating learning and assessment in the context of diverse student groups may also be of interest.

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