

# **Enhancing student engagement in information systems education – a longitudinal case study from a Sino-Foreign university**

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## ABSTRACT

This doctoral thesis describes five years of research on an undergraduate accounting information systems module at the China campus of Nottingham University Business School. The central research question is 'How can small group interactions be designed to improve student engagement in information systems education?'. To this end, an interpretive philosophical paradigm is adopted to address three research questions which are explored in distinct phases:

In the first phase a grounded approach is taken to address the question - What influences engagement in small group interactions?

The second phase takes the themes identified in the first phase and addresses the question - What strategies might be adopted to address these influences?

In the third and final phase, a longitudinal study is conducted, in which the strategies identified in the second phase are then applied, in 3 cycles of action research, addressing the question – How, why and what would be good practice in implementing such strategies?

This research finds 36 themes that influence engagement in small group interactions, strategies are then identified to address those themes and those within the scope of control of the researcher are tested.

This research confirms that the findings in the extant literature relating to mainland Chinese undergraduate student engagement, in Western undergraduate programmes overseas, also apply to such programmes conducted in the mainland Chinese context. In addition a sense of student empowerment over influencing pedagogy to suit preference in terms of classroom environment, interaction timing, second language use, and tutor focus is found.

Among the strategies tested, a problem-based group project, set within a familiar context and informed by an evidence-based design approach, which values the opinion and experience of the student as designer of the proposed problem

solution, was found to be the most effective in promoting early engagement in the desired learning process. This study supports the argument that case study approaches, where those studies are set in unfamiliar contexts, may not be best suited for undergraduate programmes due to their inherent contextual uncertainties.

This research finds that, through adopting an evidence-based approach to research for such group projects, student evaluation of their own experience and insights changes positively, enabling more rounded and reflective critical argument and decision-making.

This work may be seen to contribute to fill gaps both in evidence from practice and in the body of 'scientific' evidence in respect of the following contexts, such gaps having been identified by the cited authors as follows:

### **Theoretical contributions**

1. Research into the area of Chinese student engagement in Western educational settings e.g. Li and Campbell (2008).
2. Qualitative research methods in general and the adaptation of western approaches to the Chinese context e.g. Watkins-Mathys (2007).
3. Literature relating to evidence-based design in teaching and learning e.g. Groccia and Buskist (2011), Rousseau and Mc Carthy (2007), Wastell (2011) and Ahmadi et al. (2012).
4. Literature relating to alignment of the expectation gap between tutors and students in cross-cultural settings e.g. Zhou et al. (2008).
5. Literature relating to evidence-based design in information systems and accounting literature e.g. Marr (2009), Baskerville (2011), Wastell (2011).

### **Practical contributions**

6. The call for case studies that "lionise" evidence-based design and avoid the contextual challenges of [case study] approaches e.g. Starkey and Tempest (2009) and Wastell (2011).
7. Further evidence from the process of adapting British teaching and learning practices for use in the Chinese undergraduate context (Zhou et al., 2008).



8. Further evidence to inform both student/staff induction processes and the body of research on the design of teaching and learning practices at NUBS in China e.g. Waters (2007).

**Key words:** Engagement, Evidence-based teaching, Evidence-based design, Problem-based learning, Action research, China, Undergraduate.



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## **1. Introduction**

The context of this research is that of student engagement in small group interactions at an undergraduate information systems (IS) module at Nottingham University Business School (NUBS) in mainland China. Within this context, the main objective of this thesis is to address the central research question:

‘How can small group interactions be designed to improve student engagement?’

The approach taken involves the capture and analysis of qualitative data, from multiple streams including focus groups, online discussion-boards and coursework, over a period of 5 years.

The research was initiated in 2011, through problems identified in teaching and learning (T&L) processes and reported by NUBS students and tutors in China. To enable the central research question to be answered, three main sub-questions were posed:

1. What influences engagement in small collaborative groups?
2. What strategies can be developed to address these influences?
3. How, why and what would be good practice in implementing such strategies?

The research was conducted in three phases – each addressing one of these three questions. First, a grounded approach to understanding the phenomenon identified by the students and tutors involved in these process was taken - this Grounded Investigation (GI) Phase was conducted in 2010/11. Having identified themes from this initial investigation, the second phase of the study looked to these same stakeholders and extant literature for strategy proposals to address these recurring themes – this Strategy Development (SD) Phase was conducted in 2011/12. Then, in an experimental phase, the strategies thus identified were applied in the design of the teaching and learning interactions of an undergraduate

module, with particular focus on seminar interactions and group coursework projects - this Action Research (AR) Phase was conducted in 2012/13, 2013/14 and 2014/15.

A final and important question that this research raises and which is discussed in speculative form in chapter 6 is:

4. What are the implications of these research findings for contemporary management education and the future development of managerial practice?

## **1.1. Identifying a research topic**

The topic identified for this research initially came to light through teaching practice and feedback communication channels at the school. Since 2007, an apparent under-participation by mainland Chinese students, in small group teaching and learning interactions, was regularly reported as a source of frustration among students and tutors in Learning Community Forum (LCF) meetings - fora used to provide students and tutors with the opportunity to voice their concerns over the design of teaching and learning processes at the school. This apparent reticence to participate had become the focus of independent tutor strategy development to 'encourage' or 'coerce' students to engage in the discursive seminars used widely as the main design of teaching and learning interactions. Despite widespread efforts, made both by students and tutors, this problem continued to impact on classroom culture and campus culture, along with academic performance of all students. In 2011 the researcher was asked to chair an investigation into the phenomenon as a sub-committee of the school's LCF.

It should be noted that during the course of this research the central theme of engagement has been referred to in many ways including '*Participation*', the term first identified in the LCF meetings, '*Communication*', '*Collaboration*' and '*Degree of Activeness*', each term being raised and defined by participants in the research. Since the main body of research relating to Asian or Chinese student behaviour in

western learning contexts seems to adopt the term, 'engagement', this term has been used to refer to the central theme identified in this research.

In a recent analysis of student engagement literature from 10 different nations, Zepke and Leach (2010:169) propose ten actions to improve such engagement, yet these proposed actions provide no practical guidance for the practitioner.

Reflecting on the general lack of recent research into the area of Chinese student engagement in Western educational settings, Li and Campbell (2008) also highlight the lack of practical strategic proposals to cope with the themes identified. Tani (2005), Li and Campbell (2008) and Liu et al. (2013:67) proving to be notable exceptions. These strategies are detailed, and compared to the strategies discovered and tested in this research, in section 6.3.

## **1.2. Analysing the research topic**

*"In the view of Chinese students, a good teacher should be a knowledge model who teaches students what and how to learn with clear guidance, and even a moral model who sets an example for students to follow and takes good care of students. Correspondingly, a good student in China should respect teachers and learn by receiving instead of criticising what teachers say. However, from the perspective of British teachers, a good teacher should be a facilitator and an organiser, helping students to develop creativity and independence. Students are expected to participate and engage in dialogue, and engage in critical analysis instead of just absorbing what the teachers say."*

Zhou et al. (2008)

The theme of engagement has also been explained in different ways in the literature including 'silence' (Ha and Li, 2012) and 'engagement' (Heng, 2013), is not unique to the specific context of this research and has been identified throughout the literature relating to Chinese students in non-Chinese contexts (Briguglio and Smith (2012) in Australia, Tong (2014) in America, Martin et al. (2013) in 3 separate contexts and Wang (2012) in the UK, to name but a few).

Chinese students are often seen as 'passive learners', remaining quiet and compliant in seminar interactions, whereas the British university approach prides itself on student-centred learning, the Chinese student does not feel comfortable

engaging in such participatory student-to-student communication, preferring teacher-centred, rote learning (Wang, 2012).

Li and Campbell (2008) assert that, while there is research interest in cooperative learning in small groups, little is yet known about the perceptions and attitudes of Asian students towards group work and projects. However, this reticence to communicate or participate in group-based activities and coursework has been widely identified, particularly in multicultural classrooms, using English as a second language (De Vita (2000) and Liu (2006)). Through interviewing Chinese students engaged in study in New Zealand, Li and Campbell (2008) gain insight into the student perspective and their evaluation of group discussions. Based upon these interactions, they argue that students value the insights gained from peers that come from other contexts/cultures and who share their views. In contrast to other literature, Li and Campbell (2008) argue that the 'passive learning' or 'spoon-feeding' preference of the student is not a preference for a tutor-centred style of teaching, but rather one for more control over a student-centred approach *'so they can have full control of the final product'*.

### **1.3. Why does this warrant attention?**

At the university level, in an attempt to treat the symptoms of problems in adjusting to the Western style of education, some universities have encouraged staff to pass substandard work from overseas learners (BBC News, Wales, 2012). Others, like UNNC have tried to improve the 'fit' of these learners by providing additional training and access courses, international foundation programmes, that focus on language, as well as local culture and study skills.

As more and more international universities move to take advantage of the Chinese academic landscape, by creating a local footprint or by accepting more mainland Chinese applicants, so the availability of evidence from studies relating to engagement of these students in such institutions becomes more significant (Heng, 2013:179).

As highlighted by Iannelli and Huang (2013) and Briguglio and Smith (2012) the number of Chinese students choosing to engage in studies abroad continues to rise and the themes discovered through this research are to some extent echoed in each of those contexts (Briguglio and Smith, 2012). For further details on the specific context of this research, please see Appendix M. It is interesting to note that, depending on who is present in the conversation, the University of Nottingham Ningbo China (UNNC) is sometimes presented as a Chinese university with British characteristics and sometimes as a British university with Chinese characteristics. Does this balancing act impact on the behaviour of the students? Does it matter that this context is set within China, albeit at a British university campus?

#### **1.4. The contribution**

*"[A]s the nature of student learning is not context-free (Kahu 2011), it is of utmost importance that more research be undertaken in order to understand differential influences of student engagement on achievement outside of the context of the existing literature."*

Heng (2013:179)

One of the key contributions of this research is to translate theory into practice – taking evidence emerging from participating practitioners in this context, combining this with evidence from the extant literature before applying these ideas experimentally in progressive iterations of the information systems teaching and learning cycle.

An important contemporary approach, taken both in teaching practice and in information systems design and management, is that based upon best available evidence (Briner et al., 2009). Evidence-based management and design may not be the main focus of the research, however it should be recognised that evidence-based concepts may be seen to have influenced many elements of this research. These influences are explained and discussed in detail in section 7.3.5.5 where the importance of these approaches and the potential impact of this research is highlighted.

This research provides much needed practical evidence from action research to enhance small group teaching in business schools, filling the gap in the literature by providing evidence about IS student engagement in such a Western university set within the mainland Chinese context. As highlighted in the findings of this research (7.3.2), the focus of this research on student engagement in an IS module is also contextually important.

By adopting an interpretive, iterative and adaptive approach, one outcome of this research, which addresses questions of adaptation of both research method and teaching practice to a given context, is evidence to support the design of teaching and learning interactions. Alignment between teacher and learner expectations of teaching and learning interactions should not be expected to be achieved by unilateral adaptation. Zhou et al. (2008) refer to this alignment, adopting the lens of 'culture shock' to understand the phenomenon, as "*cultural synergy*" asking for "*mutual efforts from both [...] teachers and [...] students to understand one another's culture*". While 'culture' here may be seen to refer to both academic and non-academic nuance, the research of Gu et al. (2010) identifies the difference in academic culture as that perceived by international students to be the most challenging in the British university context.

Are these differing views and expectations, merely symptom of protectionism, as expressed by Shaw (1975) '*all professions are conspiracies against the laity*', a failure to integrate - as suggested by Weerakkody and Currie (2003:309) in their work on alignment theory in information systems, or simply a 'failure to communicate' (Rosenberg, 1967)?

## **1.5. Reflection on introduction**

Over the course of this research project, a body of research has developed examining the impact and behaviour of Chinese students studying in foreign Universities. The context for this research is similar in that the subject is still Chinese students at a foreign university, but the context is different since the



university is situated in China, the ratio of Chinese to non-Chinese students is high and this campus of the University is, to a certain extent, regulated by the Chinese government.

Such context specific and interpretive research has been called for across the literature (Martinsons and Westwood (1997:11), Trauth (2001:13), Chan and Reich (2007:310), Hirschheim and Newman (1991:29) to name but a few) and thus the research outcomes of this work should help contribute towards, hopefully echoing across, that perceived void.

# 2. Literature review

*"[I]t is impossible to not be influenced by the background knowledge that one has; it is vital to be aware of what one knows and [is] inclined to believe while being aware of alternative biases other people may and do hold."*

Wolfswinkel et al. (2011:9)

## 2.1. Introduction

In the same way that a methodology needs to be established for primary research, so a methodology is needed in secondary research, such as the scoping of literature for review (Hidalgo Landa et al., 2011). As suggested by Wolfswinkel et al. (2011:9), it may also be important to recognise that, prior to embarking on this project, the authors mind was not a clean slate since, before the research commenced several influential information sources had already been accessed.

In the following chapter, first the selection process of literature scoping method is discussed before the chosen approach is applied and the literature thus discovered is presented.

## **2.2. Scoping method**

### **2.2.1. Introduction**

To ensure that the topics relating to this research are covered, boundaries need to be crossed and so a framework of analysis – a ‘scientific’ method – is required (Hidalgo Landa et al., 2011).

The decision over which comes first, the literature review or the method for selecting literature to review, has the potential to become a chicken-and-egg conversation and indeed the iterative nature of the project demonstrated that this process of discovery, as recognised by the more experienced researcher, necessitates an iterative return to the literature (Hidalgo Landa et al., 2011).

Three scoping frameworks were considered for the main literature review. The first, a 9 step content analysis approach, proposed by Carley (1993) and used by Finney and Corbett (2007), the second, a five stage iterative method proposed by Wolfswinkel et al. (2011) and finally an evidence-based approach, put forward by Hidalgo Landa et al. (2011).

Due to the iterative nature and grounded approach of the GI phase of this research project, the Wolfswinkel et al. (2011) framework was seen as most relevant and was adopted as the main framework, as informed by both Carley (1993) and Hidalgo Landa et al. (2011).

While Hidalgo Landa’s (2011) approach has merit and recognises the challenges posed in scoping the literature, it seems to exclude one of the fundamental concepts of an ‘evidence-based’ approach – the people engaged in the process under investigation (See Figure 41). The importance of using such ‘cultural insiders’ in each stage of a research process has been emphasised in the IS literature (Watkins-Mathys (2007), Kaigler-Walker and Gilbert (2009)) and, since an evidence-based approach (emphasising the importance of the perspective of those

affected by the design) has been adopted in this research, this additional aspect of the literature scoping process was included (See section 2.2.3).

The 5 stage framework proposed by Wolfswinkel et al. (2011) was taken as a guide to systematise the literature review process, ties in with the overall research process and may be seen as iterative in nature – as new themes emerge, so they are added to the ‘terms’ specified for the literature review. This review process continued throughout the research project.

STAGE	TASK
1. Define	
1.1	Define the criteria for inclusion / exclusion
1.2	Identify the fields of research
1.3	Determine the appropriate sources
1.4	Decide on the specific search terms
2. Search	
2.1	Search
3. Select	
3.1	Refine the sample
4. Analyse	
4.1	Open coding
4.2	Axial coding
4.3	Selective coding
5. Present	
5.1	Represent and structure the content
5.2	Structure the article

Table 1 Five-stage grounded-theory method for reviewing the literature (Wolfswinkel et al., 2011)

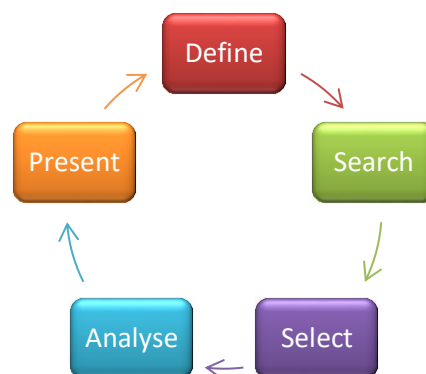


Figure 1 A staged-process view of the Wolfswinkel et al. (2011) approach to literature review.

In the following sections, each stage of the Wolfswinkel et al. (2011) guide is detailed as it impacted on this review process.

## **2.2.2. Stage 1 Define**

### **2.2.2.1. Stage 1.1 Define the criteria for inclusion or exclusion**

Following the initial taught content and submissions made on the programme, it emerged that there was a general lack of qualitative research in the IS literature (Chan and Reich, 2007), that evidence-based approaches were emerging in the information systems field (Baskerville, 2011), but that teaching of these approaches in information systems education was underdeveloped.

Following the interest of both the literature and the research questions, the thrust of the research project was therefore directed towards a qualitative approach (See section 4.2.2). Where literature was identified that had relevance to the study, this was first weighed against the need to ensure quality and secondly the need for contextual relevance.

In an effort to ensure quality, the search was restricted to peer-reviewed academic and practitioner journals and their cited works. Contextual relevance was ensured in two ways:

1. By stipulating search phrases and multiple words, in addition to single words (Hidalgo Landa et al., 2011). It should be noted that while the idea of controlling searches in this way seems logical, in practice the approach is not as clean cut as the process description would seem to suggest. Sometimes journal papers, identified through their title or abstract were found to be unavailable, sometimes a paper matched two separate criteria or the paper was found to relate to two or more separate themes. Where papers, relating to other criteria but not relevant to the search criteria, were identified, these were included and carried to the next stage of analysis. This re-opened the question as to whether any papers were missed through search tool limitation or nuance, or a gap in the researcher's search string net. That having been said, the process is

repeatable, simply by copying and pasting (having first authenticated the user) the URLs posted in Table 8.

2. In the case of the participant led search, a manual searching approach rather than electronic searching techniques was used, leading to the discovery of literature relevant to context by the reading of hardcopies of all titles published in the Academy of Management, Learning and Education journal, between 2004 and 2012.

For the initial data collection phase of the main literature review, the unit of analysis was the journal article (Carley, 1993). As the research process progressed and literature was sought based upon specific themes, so the theme became the unit of analysis.

#### **2.2.2.2. Stage 1.2 Identify the fields of research**

The purpose of the initial literature review was the discussion of contemporary thinking in the fields of information systems generally, with some focus on teaching and learning and the context of China.

The second iteration of the main literature review recognised the need to include literature from other fields addressing evidenced-based approaches with emphasis on teaching and learning.

Subsequent iterations covered emerging themes, embraced other fields as they related to themes not covered in depth in the literature previously scoped and update the literature to capture publications made during the time that had elapsed during the project.

#### **2.2.2.3. Stage 1.3 Determine the appropriate sources**

The discovery of information sources for this research was supported by tools provided by the University of Nottingham IT-Services department in the form of electronic databases of literature and libraries of printed material. These resources were made available through a search portal - NUSearch. This portal gives access

to all subscriptions of the University of Nottingham. No limitations or criteria were imposed to filter the journals searched for this research, only the search strings used for the desired theme. In theory, this should have made it fairly easy to locate and access sources of reliable academic information and journal articles. In practice, this proved to be one of the main challenges of the literature review. All too frequently papers that seemed of interest, or which matched the key words or phrases employed in the search, were unobtainable – the abstract being the only accessible portion of the work.

In addition, in the field of teaching and learning, a colleague made available their collection of the complete series of journals of the Academy of Management, Learning and Education, from 2004 to 2012. These physical copies were used in the participant led literature search (2.2.3) but, in reviews conducted independently by the researcher, the sources accessed were limited only by availability through the NUSearch portal. This reduced concerns over bias towards one journal, raised by the decision to include these physical copies.

Due to the broad range of themes being scoped, the experience gained from previous iterations and the diversity of those interested in researching the areas, it was felt appropriate to include all available peer reviewed sources published in English. This decision sometimes led to a large number of articles requiring review in the initial stages of the scoping, but has hopefully led to a richer discovery than might otherwise have been achieved.

#### **2.2.2.4. Stage 1.4 Decide on the specific search terms**

Since the initial focus of the study was on contemporary issues in management research and research methodology, as dictated by the taught content modules, the keywords and phrases that had emerged from the authors of this preliminary literature reviewed were used as the key words and phrases for the start of the main literature search (Tables 2 to 7). At highlighted in section

2.2.2.2, in this initial review the focus was mainly on information systems literature and so the journals searched were selected from this field of study.

SEARCH TERMS	TYPE	HITS	IMPORTED
China or Chinese or Communication or Hierarchy or Knowledge	Any words	596	59
Focus group	Phrase	57	17
Analysis and Causal map, Cognitive map, or Knowledge map	Phrase	1	0
Interpretation and Causal map, Cognitive map, or Knowledge map	Phrases	1	0
Learning or Group	Any	9	2

Table 2 Search strings - European journal of information systems

SEARCH TERMS	TYPE	HITS	IMPORTED
China or Chinese or Communication or Hierarchy or Knowledge	Any words	321	51
Focus group	Phrase	16	5
Analysis and Causal map, Cognitive map, or Knowledge map	Phrase	9	5
Interpretation and Causal map, Cognitive map, or Knowledge map	Phrases	5	0
Learning or Group	Any	266	12

Table 3 Search strings - Information Systems Research

SEARCH TERMS	TYPE	HITS	IMPORTED
China or Chinese or Communication or Hierarchy or Knowledge	Any words	541	63
Focus group	Phrase	5	3
Analysis and Causal map, Cognitive map, or Knowledge map	Phrase	6	3
Interpretation and Causal map, Cognitive map, or Knowledge map	Phrases	1	1
Learning or Group	Any	0	0

Table 4 Search strings - Management Information Systems Quarterly

SEARCH TERMS	TYPE	HITS	IMPORTED
China or Chinese or Communication or Hierarchy or Knowledge	Any words	277	57
Focus group	Phrase	5	2
Analysis and Causal map, Cognitive map, or Knowledge map	Phrase	2	0
Interpretation and Causal map, Cognitive map, or Knowledge map	Phrases	2	0
Learning or Group	Any	245	18

Table 5 Search strings - Information Systems Journal

As the focus of the study broadened and matured to include additional fields of study, so further journals were added until, in the final reviews, all peer reviewed journals were included in the search. As suggested by Saunders et al. (2012), this



incremental broadening of scope of the review process may be seen to have influenced the direction of this research, giving it a more information systems bias than might otherwise have been expected. However, since the focus of this research is information systems education, this initial influence might be anticipated.

Search Terms	Type	Hits	Imported
Analysis and Causal map, Cognitive map, or Knowledge map	Phrases	9	2
Interpretation and Causal map, Cognitive map, or Knowledge map	Phrases	24	10

Table 6 Search strings - Knowledge Management Research and Practice

Search Terms	Type	Hits	Imported
Full manual review process - 2006 to 2012	All	9	2
Communication and Culture	Any words	2	1
Communication and Education	Any words	23	10

Table 7 Search strings - Academy of Management – Learning and Education

As the project came to focus more towards teaching and learning, so the focus changed and new keywords were used. In the final review, each theme name was used as a search string and no field of study or journal restriction was applied ensuring inclusion of all literature available within the University's NUSearch portal.

To focus this comprehensive scoping, the criteria applied, for each search were:

- Learning OR Teaching OR Education
- China OR Chinese
- University OR Undergraduate OR Further Education
- Past 10 years
- Peer reviewed

The full list of terms searched is shown in the following table (Table 8):





Additional references were also discovered through their citation in the papers identified through this search process.

### **2.2.3. Stage 2 Search**

As detailed in the previous section, the researcher engaged in iterative literature searches online with the defined search strings using the University's NUSearch portal.

In addition and as mentioned in the introduction to this section (2.2.1), it is suggested in the literature that 'cultural insider' research assistants be employed in each stage of the research process, and so the process of selecting papers from this collection of journals included student participants as research assistants (Watkins-Mathys, 2007:209). Participants in this literature review process were all bi-lingual Chinese students with an English ability of level 6.5 IELTS or higher.

In this approach, the research assistants read each article title out to the group for their assessment of relevance. Again, if the title did not make clear the topic being researched, the abstract was read to enable a decision to be made. This was a collaborative exercise with a lot of discussion and interplay between the participants. These titles were also read by the researcher and there was little disagreement in what should and what should not be included. Since this journal was also included in the NUSearch collection and therefore fell within the scope of the online search, the impact of this manual process on literature selected might be that additional relevant articles came to the attention of the researcher that, without the insights of the cultural insiders involved, otherwise might not have been identified.

For both the manual and online searches, if the focus of articles discovered was not made clear in the title, the article was read until relevance or irrelevance could be established. At this stage, if an article had not demonstrated relevance it was ignored, otherwise if the journal article was found to relate to a theme identified in the analysis or previous review, then the article was included by importing into

Mendeley ([www.mendeley.com](http://www.mendeley.com)), a free online academic reference management database. This process was subsequently migrated to Endnote X6 and then X7, when capacity limits were reached in Mendeley in 2012.

As suggested by Wolfswinkel et al. (2011:4), on occasion words were added to the search terms, where different terms were discovered, that represented the same theme. For example the word, 'Communication' was adapted to 'Communication' AND 'Group' to provide better focus on the research theme. Such an approach may make the search more precise and relevant, but may also lead to the exclusion of some literature with relevance not identified in the searchable database fields.

#### **2.2.4. Stage 3 Select**

The third stage is a more detailed selection process where the sample is refined. Journal articles seen as relevant from the initial search and screening were saved and reviewed within the Mendeley/Endnote database. Duplicate articles discovered through different searches were initially matched through duplicate file names or having finalised the reference information, identified through matching references – hard copy references were rejected in favour of electronic copy for ease of access and mark-up in NVivo.

Journal articles with no established relevance were categorised as "Not Used" and remained in Mendeley/Endnote.

#### **2.2.5. Stage 4 Analyse**

##### **2.2.5.1. Stage 4.1 Open coding**

An interactive, inductive and iterative approach was taken, allowing for all themes to be included in the search as they emerged during the course of the data analysis (Finney and Corbett, 2007:333).

As the research matured, the issue of deciding on how to distinguish between concepts was largely addressed in tandem with the constant comparison method

(Pivec (2006), Gibbs (2002)) for analysis of the themes emerging from the data. Each of the three stages of analysis, open coding, axial coding and selective coding being informed by and informing the literature scoping process.

Using the Endnote database, it was possible to create and name "Group" and "Group Set" folders to enable a single journal article to be classified into multiple categories where multiple themes were found to be addressed. Articles which were found to have relevance to the emerging themes were then also coded in NVivo to allow linkages between specific sections of text and themes to be identified and stored.

In the final review, identified papers were saved to specific folders and then imported to Endnote using a function to create themed folders automatically based upon the folder structure. Sometimes the papers discovered did not match the theme being searched but matched other themes, or were found to match several themes. In such cases, the initial coding/grouping from the import to Endnote was left in place and additional coding to the other relevant themes was added.

While Strauss and Corbin (1998) warned of the dangers of borrowing terms, due to the danger of inheriting unshared meanings, most definitions of terms that emerged from the participants engaged in this research with well-defined meanings. This was because the activities included in the focus group design involved collaborative definition processes. However, testing of these definitions revealed that some were indeed open to alternative interpretation and, where this was found to happen, the term was revisited by analysis of video/recordings, by follow-up interview and, in some cases, sub-division of terms in subsequent focus groups.

#### **2.2.5.2. Stage 4.2 Analyse - Axial coding**

The axial coding of texts followed the analysis stage of the research and, with the use of NVivo, was a relatively quick process. However, where themes were

discovered in the text that had not, or had not yet, emerged from the data, these themes were coded separately in NVivo.

#### **2.2.5.3. Stage 4.3 Analyse - Selective coding**

When it was decided, in the selective coding stage, to combine two themes into one, the name was adapted to reflect each theme. In most cases, this methodology had no impact upon the categories discovered, since there was found to be a thread of common interpretation and naming in the literature, however, by adopting these common referents the dangers of doing so need to be recognised.

#### **2.2.6. Stage 5 Present**

##### **2.2.6.1. Stages 5.1 and 5.2 Represent and structure the content**

The first framework adopted for presenting the literature was broadly divided between information systems literature and teaching and learning literature, following the path of discovery, although a third section for other literature was then found necessary.

Where a topic is addressed in an earlier section, it has not been repeated in a subsequent section. However, details from other fields of research, addressing the same theme, have been brought into the discussion to provide a more holistic argument.

#### **2.2.7. Reflection**

While the literature discovery in this project may have been rigorously conducted, this research was carried out over a significant period of time. Furthermore, due to inaccessibility, beyond the abstract, of a number of seemingly relevant and contemporary pieces of literature, these could not move beyond the initial discovery phase unless inter-library loans were available, so it seems certain that more literature is available than has been cited and included in this work.

This may not be an unusual issue, access to publications within the first 2 years of publication apparently running at a premium and so, while it might be argued that modern technology potentially provides access to more material on a timelier basis than before, this barrier to evidence and any resulting weakness in the review, should be recognised.



## 2.3. The literature

*'If the names are not right, you cannot speak logically; if you cannot speak logically, you cannot get things done.'*

Analects 13:3 in Lai (2005:251)

### 2.3.1. Introduction

In this literature review, first the central theme of 'engagement' is defined, before the literature, discovered through the scoping process and described in section 2.2, is discussed.

### 2.3.2. Engagement

In their report to the Higher Education Academy, Trowler and Trowler (2010) conclude that the term 'student engagement' while representing different phenomena in the literature, depending on the context of that study, may be seen to fall into three categories:

- Engagement in individual student learning
- Engagement with identity
- Engagement with structure and process

As it emerged through the discussions between participants in this study, the focus of the term engagement in the context of this research seemed to disregard engagement with structure and process at an organisational or campus level and focus more on individual student learning and identity.

Through their review of the extant engagement literature, Trowler and Trowler (2010:14) conclude that, although some students experience engagement negatively, student engagement helps improve outcomes from teaching and learning interactions for all students, and particularly those that held such views of engagement as a negative process. So what is engagement?

Several theoretical frameworks, relating to this central research question of engagement, were considered during the design of the project. As the project matured, shifted in focus and changed its shape on the pathway to conclusion, different frames were considered, adopted and then discarded when relevance seemed to fall by the wayside. This does not reflect a fickle attachment to these frameworks, more a reflection of how challenging it proved to be to find a fit that held relevance to the specific context of the study - evidence-based teaching of information systems at a British university business school set in a Chinese context seemed a tall order at the outset, and so it proved to be.

A recent framework, relating to student engagement was identified as the researcher's analysis of themes was underway (Figure 2) and this work by Kahu (2013:766) seemed to match quite closely to the themes this research and tied in with the overall goals of the project. Adopting this framework as the working definition of 'engagement', the emphasis can be seen to be on the positive affect of the interaction design on enthusiasm, interest and a sense of belonging, cognition in achieving a deeper learning through independent self-regulation and lower tutor dependence and the behavioural aspects of student interactions in terms of the time and effort expended, interaction with tutors and peers and active participation, within the given context (Kahu, 2013:766).

The framework seems a good fit since it expends across prior and post influences and consequences of the interactions, including the intended 'better informed decisions' (Figure 44), or 'distal consequences' of this thesis.

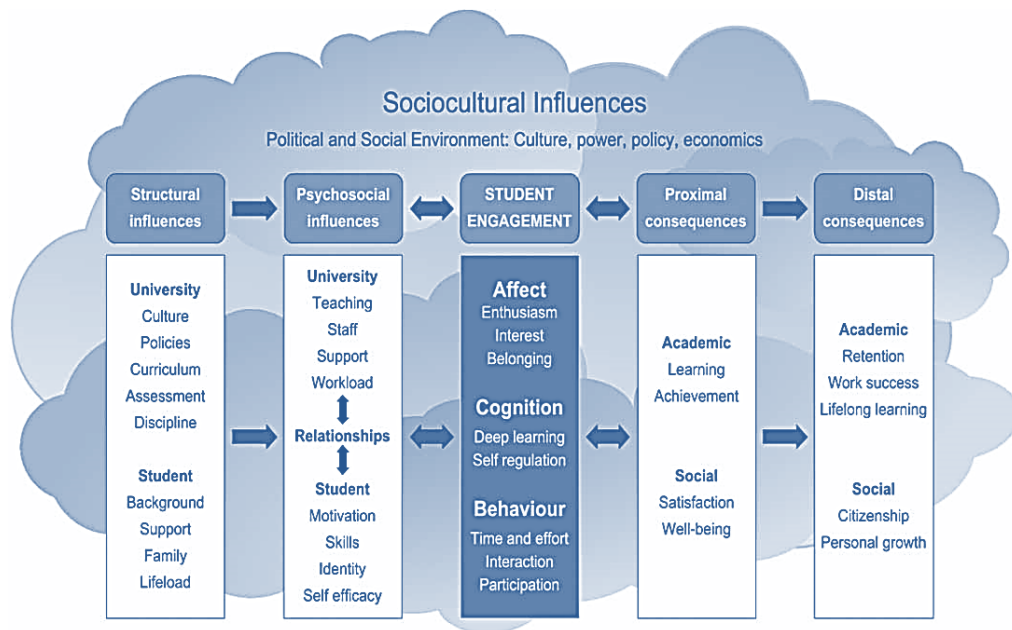


Figure 2 Conceptual framework of engagement, antecedents and consequences (Kahu, 2013:766)

As the designer of these teaching and learning processes, recognising that learning-related issues might result from misaligned expectations between tutors and students and that tutors may learn from students by understanding their cultural traditions, is important evidence to inform this design process (Zhou et al., 2008). But the importance of this recognition of 'culture shock' holds true to some degree for all students leaving secondary education and entering university (Zhang et al., 2015). So, while awareness of difference helps inform the design of effective teaching and learning interactions, the overriding consideration needs to be on the desired learning outcomes – what the person has learned rather than been taught - and the design of the process to arrive at that final destination from these different starting points, perceptions and expectations.

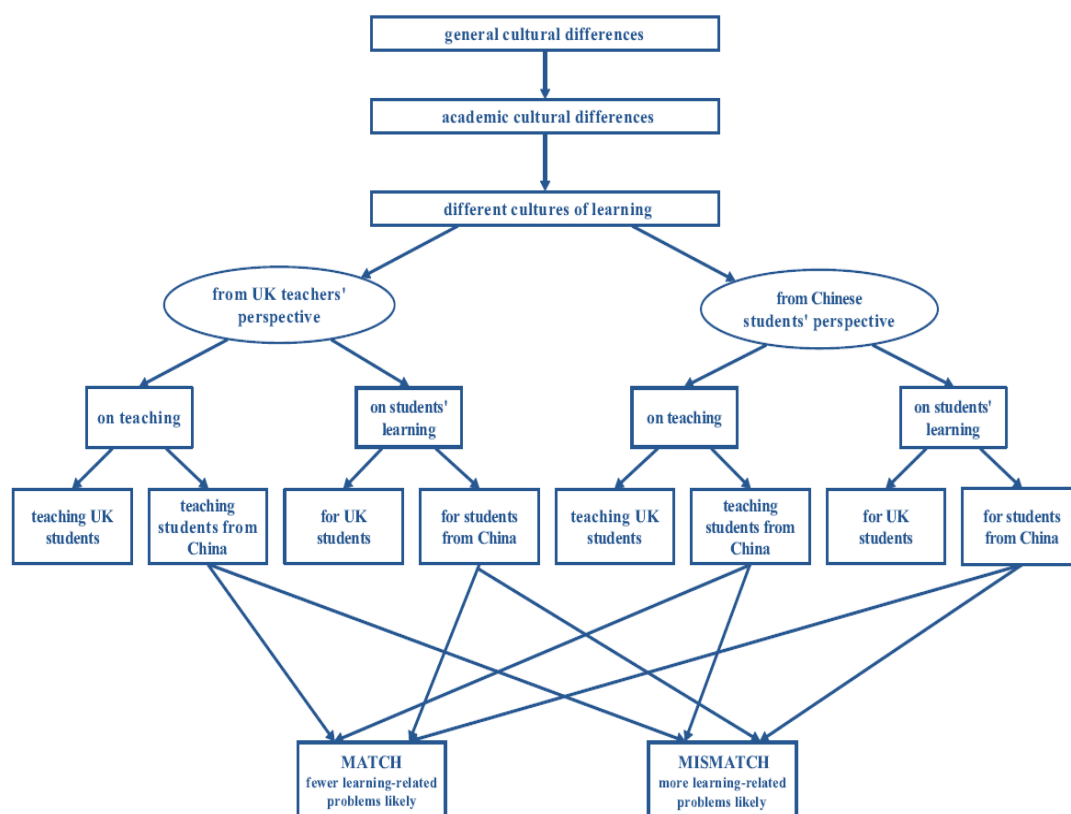


Figure 3 Aligning tutor and Chinese student perspectives (Zhou et al., 2008)

In Figure 3, the concept of matching or not are not seen as absolutes and indeed such alignment would be seen as constantly changing and different for each interaction between teacher and student perspectives and the reciprocal adaptations made by each (Zhou et al., 2008).

While providing no strategic advice for practice, Zepke and Leach (2010:169) do provide a useful conceptual perspective through their analysis of recent engagement research conducted across 10 nations:

PROPOSALS FOR ACTION	
1.	Enhance students' self-belief
2.	Enable students to work autonomously, enjoy learning relationships with others and feel they are competent to achieve their own objectives
3.	Recognize that teaching and teachers are central to engagement
4.	Create learning that is active, collaborative and fosters learning relationships
5.	Create educational experiences for students that are challenging, enriching and extend their academic abilities
6.	Ensure institutional cultures are welcoming to students from diverse backgrounds
7.	Invest in a variety of support services
8.	Adapt to changing student expectations
9.	Enable students to become active citizens
10.	Enable students to develop their social and cultural capital

Table 9 Proposals for action (Zepke and Leach, 2010:169)

Some common issues identified in group based assignments were identified by Li and Campbell (2008:205) in the New Zealand context and included communication of project requirements and limitations in respect of learning objectives, relevance to practice, support and training to complete the project and a lack of choice and flexibility. There was also concern about 'social loafing' or 'free-riding' where group member contributions and effort were not balanced and finally, in project and people management where agreeing work schedules and language use were problematic (Li and Campbell, 2008:205-206).

In the Australian context, Tani (2005) noted the poor engagement of Chinese students, but remarked that this behaviour seemed limited to classroom interactions since they became quite interactive outside of teaching and learning interactions and in personal tutorials. This observation supports the researchers experience in the context of this research.

Tani (2005) distinguishes two streams of study into the phenomenon of Asian (Confucian heritage) student engagement – one relating to the mechanics of the learning process, as influenced by the in-class learning strategies adopted by such students, and the other relating to the influence of cultural background, tradition, language skills and the classroom context, upon the learning decisions made. They argue that the more we understand about the mechanics of the learning process, the less Asian learners may be seen as belonging to a separate category of learner. Instead, they suggest that low participation, or engagement, is a result of influences of Asian culture, teacher-student relationships and language skill.

The solution proposed to address the phenomenon is through teaching innovation in interaction design and the approach they suggest includes appreciation of time to reflect, but most significantly to include written as well as spoken communication in the design of the teaching and learning interaction (Tani, 2005). Such an approach was found to be effective in their context, leading to

improved engagement and student satisfaction, perhaps by overcoming the linguistic challenges identified.

In an unusual paper, since it focussed on Chinese student engagement in a Chinese university, Zhang et al. (2015) examine the factors that influence student engagement in that context and seek to explain the relationships between them as perceived by tutors and students. While it should be recognised that the context of their study is one of an undergraduate English course which, as discovered in this research, may remove the linguistic issues identified in engagement processes, the three significant factors identified – transition, lack of student-staff interaction and ‘shock students’ (students experiencing learning-culture shock) – are all seen in research from other contexts, including this.

This research seeks to gain a better understanding of engagement in small group learning in the context of a western university business school set within the Chinese context and to provide evidence to inform EBT in the development of strategies for IS education in the Chinese context. In addition to this central theme, additional frameworks relating to the research method choice and adaptation for this study were also sought, to support and legitimise design decisions. The theoretical frameworks relating to these considerations are discussed in the research methods chapter (4).

### 2.3.3. Emerging themes

*"Language shapes the problem spaces we deal with by naming and framing them, by making them familiar. This familiarity is a two-edged sword, both enabling and constraining, giving us a perspective on what would otherwise look chaotic, but limiting our vision to the extent that we believe that what we see is the way the world is and needs to be."*

Starkey and Tempest (2009:579)

#### 2.3.3.1. Introduction

The key themes arising from the scoping of the literature, as described in the section 2.2, are discussed in the following sections.

#### 2.3.3.2. Language skills

The theme is reported across the literature in respect of Chinese learners in English speaking contexts. Examining general and Chinese student second language use anxiety, Mak (2011:202) lists nine factors, all of which also emerged from this research:

- speech anxiety and fear of negative evaluation,
- uncomfortableness when speaking with native speakers,
- negative attitudes towards the English class,
- negative self-evaluation,
- fear of failing the class/consequences of personal failure,
- speaking in front of the class without preparation,
- being corrected when speaking,
- inadequate wait-time,
- not being allowed to use the first language in a second language class.

This impact of self-assessment of language ability, as a motivator / barrier / de-motivator, in respect of group work and willingness to communicate, is reflected throughout the literature (For instance Briguglio and Smith (2012), Eddy-U (2015), Yalçın and İnceçay (2014) and Holmes (2004)).

### **2.3.3.3. Expectation setting**

*"So how high is that bar" and "[h]ow do you want me to jump over it?"*

(FG09 Research notes)

In this research the numerous themes identified were framed into 4 areas, Preparation, Performance, Evaluation and Design, which fit neatly with Kolb's (1984) learning cycle's Interpreting, Planning for action, Teaching activity and Reflecting, but removes focus from the purpose of the cycle. The need to specify learning outcome is highlighted by Baskerville and Wood-Harper (1998) and emphasised by Li and Campbell (2008:213) in their strategy proposals. Eddy-U (2015:53) proposed that teachers should explain the "why am I learning this?", or rationale behind the task, prior to student engagement.

An interesting insight is provided in Tani (2005) where it was again found that there were many contributing factors to Asian students' silence in group participation, such as cultural influences, teacher-student relationships, the composition of the group members, and teaching approaches. However, they concluded that these factors pale into insignificance when student participation was linked with assessment. It was the anxiety and lack of understanding of the system of reward and punishment, as demonstrated from group assignments, which brought about Asian students' silence.

### **2.3.3.4. Preparation**

Within the Chinese culture there is a strong belief that success is not dependent upon ability, but that it is achieved through hard work, strong will-power and effort (Holmes, 2006:26). Respect is accorded by students in this research to peers who they see to be hard-working, valuing their membership in group interactions. Such commitment to their learning is often equated to the quality of preparation by a student prior to seminars.



Research into Chinese student motivation has recently become popular due to their strong performance in international academic assessments (Martin et al., 2013:417).

#### **2.3.3.5. Problem setting**

Tailoring group tasks to learner's interests could help improve participation in small group interactions (Eddy-U, 2015:53) and tailoring module content to the student has been a feature of NUBS in China management directive for some time now – the particular focus being towards Chinese related research and practice.

One of the continuing challenges in problem setting seems to be the communication of the problem itself, its scope and the empowerment of the student to make design decisions in developing solutions. Gram et al. (2013:763) suggests that problem-based learning may be particularly challenging to Chinese students since the notions of active participation and critical discussion are new to them.

At the very first stage of their interaction design, Antonakis et al. (2011:381) took the step of demystifying the desired learning outcomes of the interaction and demonstrating how they would be of practical use to the students engaged in the process. It may therefore be seen that the initial adaptation to the problem-setting approach, at the very beginning of these projects, represents the first hurdle to their adjustment to a Western pedagogy. Clearing this hurdle is something that therefore needs to be supported both in terms of learning how to learn, in this process of academic acculturation, and in terms of achieving the desired learning outcomes of engaging with the problem.

#### **2.3.3.6. Group dynamic**

Group size, composition and the familiarity of group members with each other were all highlighted as themes in this research.

Group selection for the small group interactions, most particularly in respect of longer term collaborations in group projects, are frequently reported as a factor

influencing these group interactions. This may also relate to concern over the free-riding phenomenon and a concern for equally study focussed hard-working characteristics among group members. Jassawalla et al. (2009) recognise that while teaching team-working skills might be of help, free-riding is a complex issue that goes beyond programme design and so module designers cannot implement solutions unilaterally to address phenomena like student apathy or disconnectedness.

Gender is recognised as a potential influence over the development of group hierarchy (Bevelander and Page, 2011). This view would seem to be influenced by the traditional view over gender roles in China, although it would seem that for some, particularly from less rural areas, a view of imbalance is fast changing (Zhang, 2006:547). The positive effect on academic achievement related to the mixing of genders in group projects, as reflected in Orlitzky and Benjamin (2003), was not tested during the course of this study.

Within Bourdieu's 'Theory of Practice', individuals within any field are seen to receive and accumulate 4 types of capital, which they then expend to reinforce their status relative to others in the field (Dudezert and Leidner, 2011). The wealth of an individual, as well as the overall distribution of this capital in a field, not only determine the individual's repertoire of behaviour but also influences the individual's perception of reality (Dudezert and Leidner, 2011).

TYPE	DEFINITION
Economic Capital	An individual's ability to access financial resources
Social capital	An individual's access to and influence over a social network
Intellectual / cultural capital	An individual's education, knowledge, and professional expertise
Symbolic capital	An individual's power to dictate the value attributed to the other forms of capital

Table 10 Capital structure of Bourdieu's Theory of Practice

Individuals, with symbolic capital in an organisational setting, are often those with hierarchical authority. Unlike the other capital, symbolic capital is not earned but is instead assigned or ascribed to the individual by other individuals in the same field (Dudezert and Leidner, 2011). Symbolic capital is based on the taboo of

'explicitation': people in a social group accept the magic strength of the symbolic capital because of an individual and collective self-deception based on structural mental schemes shared in the group (Dudezert and Leidner, 2011).

The work of Wu and Bao (2013) in gaining an understanding of such capital in Chinese students in Beijing concluded that factors leading to the achievement of student leadership roles included gender, only-child status, local Hukou, and CCP membership.

### **2.3.3.7. Teacher interventions**

Pedagogical approaches chosen in this context have, as reflected in Ha and Li (2012:245), led to tutor frustration about quiet moments and quiet students.

However, instead of viewing silence as symbolic of student resistance, choice and right, it might, as also seen in this research, simply represent a reluctance to being the centre of attention – to stand out from the crowd (Ha and Li, 2012:245).

Effective tutor-student communication, as with good comedy, must therefore be seen as one determined by timing. Like the focus group facilitator, the tutor must be prepared to allow silence in interactions, to allow ideas and discussions to develop, before they can be shared by participants in the interaction.

Burke and Sadler-Smith (2006:169) reflect on the significance of the reliance by tutors on their own intuition as a guide to interventions in shaping the nature of teaching and learning interactions. Such intuition is also seen commonly as guiding practitioners in other business contexts (Sadler-Smith and Shefy, 2007). Such intuition, they argue, is born of experience, both positive and negative, from prior interactions and is used to guide decision-making in the complex and fast-moving environments, rather than established technical-rational approaches Burke and Sadler-Smith (2006:169). Recognising that there is no formulaic approach to teaching that might be suited to all decision-points, and that there are a lack of explicit guidelines, they argue instead that intuition be harnessed and recognised

in the learning interaction. This, it is argued, would both enhance the teaching practice and the student learning (Burke and Sadler-Smith, 2006).

Taking the evidence-based perspective, this might be seen as a call to recognise the experience of both the designer and the people affected in design decisions – two of the four sources of evidence in an evidence-based design approach (Figure 43).

### **2.3.3.8. The Students**

The majority of the students involved in this study are from mainland China. This means that group projects are conducted by groups either entirely comprised of five Chinese mainland students, some groups with one non-Chinese mainland student or, occasionally a group with two.

The previous classroom experience of these students has been influenced by Confucian values including:

- the importance of family,
- the relational role of self with and to others and
- the power distance between the teacher and students,

resulting in students speaking only when required (Holmes, 2006:22).

This leads to a general expectation that teachers will lead learning interactions, so challenging and questioning the ideas of the teacher may appear foolish, time-wasting and potentially cause a loss of face to all concerned through a perceived disrespect of the teacher (Holmes, 2006:22).

However, it would be a mistake to gather from this single demographic factor that, despite nationally distributed standards in education, these students are 'a member of a stereotyped, homogenous mass' (Kahu (2013:766), Martinsons and Westwood (1997)). To do so would be to ignore the rich diversity of student backgrounds, experiences and individual characteristics brought to the academic table. However, the self-perception of homogeneity among Chinese students, was

often noted in this research among early undergraduate student participants, whose low evaluation of self-generated ideas or beliefs was seen as a factor leading to a reluctance to express themselves in group settings.

Given that the majority of students participating in this study are Chinese and that there is a wide cultural diversity within the huge country that is China, it is essential that cultural effects are comprehensively and carefully considered and not treated as a residual unexplained element of the research (Stening and Zhang, 2007:136).

Previous research would seem to indicate a preference among Chinese students for individual rather than group assessment, since it rewards the individual's strengths and effort, rather than sharing marks, which seems at odds with the traditional group preference (Wang, 2012:525) but may demonstrate a change in the values of more recent generations (Faure and Fang (2008), Wang (2012:525)). That the context and culture is changing at such a pace, must be constantly recognised when the findings of previous research are considered.

It takes time for any student to adjust to the process of teaching and learning at their chosen university, as it may differ significantly from their previous experience. These processes also vary between universities although, despite government led change, these processes at Chinese high schools and universities seem rooted in traditional approaches, quite different to the approaches taken from UK practice and applied in the context of UoN's Chinese campus (Ho, 2010). This having been said, it should be noted that a large number of Chinese students are also engaged in the same processes at the UK campus, so the practices originally applied were also informed from that experience.

That expectation differences exist would seem normal, involving change in context, change over time through review and strategic development, and changes in perception through learning. It would also seem normal that reflecting on common themes of difference in culture, motivation and expectation would be part

of the iterative teaching and learning process development of an international, innovative and interactive undergraduate programme. That these expectations do not seem to have been aligned or resolved as part of that process is therefore a significant driving force behind this thesis.

While considering the people affected, let us not overlook the impact on and influence of both parents and tutors in this context. Chinese parents have strong influences, perhaps stronger than in other contexts, over both their children's choice of programme and motivation to engage in learning interactions where future success is seen as determined by academic success (Wong-Lo and Bai, 2013). Their impact and that of other family members on student engagement should not be underestimated.

In their research in Macau, Eddy-U (2015) took a look at motivating (and demotivating) factors that influenced English language learning students' willingness to communicate in small group interactions. They highlight the relationship between task design and motivation Figure 4 Task-based elements that affect motivation in language classes (Eddy-U, 2015:45).



Figure 4 Task-based elements that affect motivation in language classes (Eddy-U, 2015:45)

The tutor engaged in the design and delivery of small group learning interactions must act and react in accordance with the performance of students engaged in them.

That this research project is conducted by this researcher in this context is no accident. The pressures to perform, in terms of the holy trinity of student evaluation of teaching practices, administrative functions and generating research output – not forgetting the emotional attachment or pride in one's work - should not be underestimated in their impact, both positive and negative, on tutor performance, interaction and motivation.

### **2.3.3.9. Culture**

In social and learning interactions, like those used in this research, differences in perceptions and valuations of learning and knowledge, can lead to significant and often misinterpreted behavioural differences in approaches to learning (Tweed and Lehman, 2002).

Chee Mok (2007:132) argue that there is no clearly defined national cultural teaching script, yet there is frequent reference to a 'British education style' or pedagogy, both in the literature (e.g. Turner (2006:28)) and anecdotally, among teaching practitioners.

On the other side of the teaching and learning coin, the learning approaches adopted by Chinese students have been found not to be tightly predetermined by their cultural heritage since they are seen to adjust or adapt to their new chosen learning context (Wang et al., 2012:622).

Liu et al. (2013:57) identify 4 types of university campus culture - material culture (teaching buildings, students' dormitories, books stored in libraries and networks etc.), system culture (a set of regulations and codes of conduct), behaviour culture (the various kinds of campus activities) and spiritual culture (the teaching ideas, spiritual pursuit which was represented by the spirit of humanity,

science and creativity in a university. They go on to make recommendations for how the interactions might be modified to enhance outcomes, such recommendations being compared later in this work to the strategies identified in this research ([Table 35](#)).

Failure to understand culture, the 'collective programming of the mind which distinguishes the members of one group or category from another (Martinsons and Westwood, 1997), and the regional or sub-cultural differences in China, would seriously undermine the reliability of a research project conducted in that context (Stening and Zhang, 2007:128).

Based on Taoism, a religion with a long history in China, there is a Chinese tendency to treat all things holistically, viewing the whole body as one in balance, with a reluctance to perceive the individual parts (Li et al., 2003).

The Chinese nature of long-term orientation and a culture which perceives most of the information to be already in the persons involved and very little in the explicit, coded parts, make managers hesitant to deviate from a clear and strict schedule (Li et al., 2003). Accordingly there is a tendency to see the process and related issues as a single entity and store this entity in the mind, rather than explicitly write them out and make a clear plan (Li et al., 2003).

Chinese culture is usually described as collectivist, where self is defined, not by inner quality but by the sum of one's social roles (Young et al., 2012:1). In this context therefore, it may be that knowledge creation and sharing has little to do with individual autonomy, but almost everything to do with gaining or avoiding loss of 'face' (Section 2.3.3.10).

It may be seen to be consistent with cultural traditions, that Chinese people seem to favour informal and implicit forms of communication (Martinsons and Westwood, 1997), showing a preference to transfer knowledge through interpersonal, rather than formal and/or written means (Burrows et al., 2005).



Reliance on such face-to-face contact inhibits codification and may restrict access to explicit information much more than technological factors (Burrows et al., 2005). Furthermore, this preference for personal, social and economic relationships leads to the predominance of tacit, over explicit knowledge which may be seen to have frustrated the government's attempts to develop nationwide knowledge bases (Burrows et al., 2005).

In terms of classroom culture, seen as a significant factor in the learning process (Liu et al., 2013), setting the tone for teaching and learning interactions falls to a large extent, to the tutor and the University, but the campus culture and the way students behave during these interactions is a more complex consideration. This complexity is reflected both in the themes emerging from this research and in the structure map developed by (Liu et al., 2013) (Figure 5).

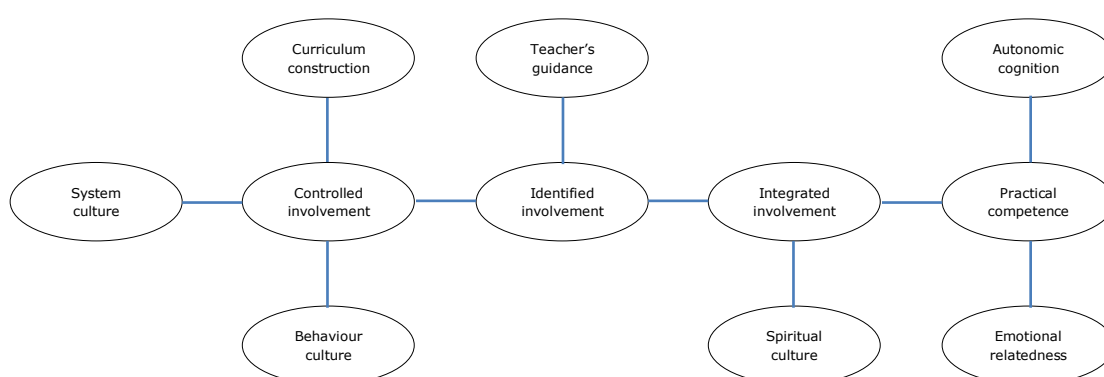


Figure 5 Revised structural paths (based upon Liu et al., 2013:64)

### 2.3.3.10. Face

Face is the 'social esteem accorded by others' (Young et al., 2012) and is 'the respectability and/or deference which a person can claim for himself from others, by virtue of the relative position he occupies in his social network and the degree to which he is judged to have functioned adequately in that position'. Face is both personal (i.e., myself) and collective (i.e., my family, business, etc.). The personal face is what others have recognized and extended to a person, while the collective face represents the prestige and honour of the social group (Young et al., 2012).

The cost and benefit factors in knowledge sharing, from the perspective of the individual in a large Chinese organisation, were analysed by Zhang et al. (2010) and their finding reflected other research into the factors of 'face' saving - the 'respect, pride, and dignity of an individual as a consequence of his/her social achievement' - is a factor which is deeply rooted in China, and influences Chinese behaviour (Young et al. (2012:1), Zhang et al. (2010)).

Gaze is a concept developed by Foucault that refers to the technique used by those in power to control those who are not. 'The gaze both gives power to the all-seeing so that they might cure the ills of the gazed upon and renders its subjects into self-policing docile bodies which behave in the "approved" manner' (Young et al., 2012).

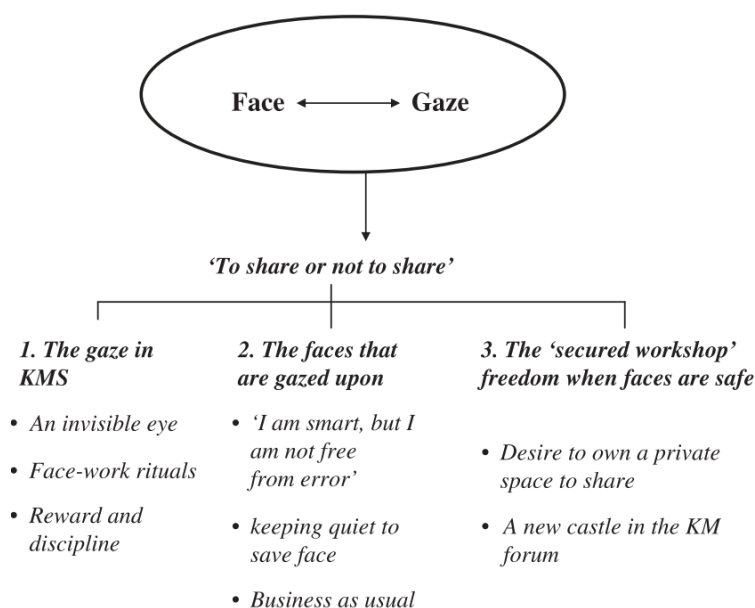


Figure 6 The concepts and themes regarding 'to share or not to share' (Young et al., 2012)

The concepts and themes identified by Young et al. (2012) in the Taiwan cultural context, highlight the nature of the factors involved in deciding what available action would be worthy of respect to retain face under the gaze of the public eye. An example of this dilemma being, 'on one hand, a teacher who wishes to be recognized as a master (i.e., to earn a positive face) must contribute his or her 'smart' and 'creative' knowledge. On the other, any mistakes may cause him or her

to lose face'. In Confucian culture, the title of teacher embraces the notion of a 'sacred role' that is worthy of respect (Young et al., 2012). Western teachers, accorded prestige through association with their role, may not be aware of the consequences of losing such face as is accorded to them and of losing the respect of peers, colleagues, supervisors, students, parents, and society more generally. In contrast, Chinese teachers aware of this issue, invest a great-deal of time in 'face-work' to maintain this respect (Young et al., 2012).

Saving face presents a double-edged sword to knowledge sharing, in that it has a positive influence on the contribution of high-quality knowledge for self-face but may also have a negative influence on contribution where participants fear losing face (Zhang et al., 2010).

This type of Chinese paradox is captured in the work of Faure and Fang (2008:197) in which they identify and analyse the effect of some of the Chinese paradoxical values (Table 11).

<b>PARADOXICAL CHINESE VALUES</b>	
Guanxi (related to social influence and connection)	Professionalism
Importance of face	Self-expression and directness
Thrift	Materialism and ostentatious consumption
Family and group orientation	Individuation
Aversion to law	Respect for legal practices
Respect for etiquette, age and hierarchy	Respect for simplicity, creativity and competence
Long-term orientation	Short-term orientation
Traditional creeds	Modern approaches

Table 11 - Paradoxical Chinese values - Faure and Fang (2008:197)

This dilemma or paradox is also epitomised in the Chinese teachings to which most Chinese students are exposed, during their early standard education in China, and with which most are still familiar, including:

“枪打出头鸟” (qiān da chū tóu niǎo) - translations include 'a nail that sticks out is struck', 'shoot the bird that takes the lead' - attributed to Li Kang (A.D. 1083 to 1140) by Wang and Xue (2004).

“树大招风” (shu da zhao feng) – translations include ‘the tall branch catches the wind’.

“大巧若拙” (dà qiǎo ruò zhuō) - translations include ‘A man of great wisdom often seems slow witted’.

However, while these paradoxes may be seen to highlight the effects of the speed of change in China over the last few decades and the challenge for the individual in navigating their way through the resulting changes in culturally acceptable behaviour, as China re-emerges from its period of confinement, many of the younger generation seem to be finding it easier to set aside more traditional values.

Having presented these arguments at an internal conference, it was particularly interesting to note the reaction of the research assistants to this project - the ‘cultural insiders’ - who, commented - “Oh you know us so well!” – it seems clear, that this research struck a chord in the chosen context.

### **2.3.3.11. Teaching and learning**

*‘There are four defects with which the teacher must make himself acquainted. Some err in the multitude of their studies; some, in their fewness; some, in the feeling of ease (with which they proceed) and some, in the readiness with which they stop... Teaching should be directed to develop that in which the pupil excels, and correct the defects to which he is prone.’*

*From Confucius - Li-Ji (Lee et al., 2004:140)*

As lamented by Charlier et al. (ND:27), while there are some notable contributions, such as Rousseau and Mc Carthy (2007), there is a surprising lack of evidence in support of specific teaching practices adopted by those seeking to teach from an evidence-based perspective. It would therefore seem that a gap in the literature in support of these practices has been identified (Charlier et al. (ND:27), Rousseau and Mc Carthy (2007)).

In this section, the literature relating to the second and third research questions is analysed within a framework encompassing teaching, collaborative problem-based learning, self-evaluation and reflection on process.

If this research is viewed as an exercise in experiential learning, the process may be seen as several iterations of Kolb's (1984) cycle (Figure 7), the "Interpreting", "Planning for action" and "Teaching activity" initially triggered by "Reflecting" on the experience of the practitioner.

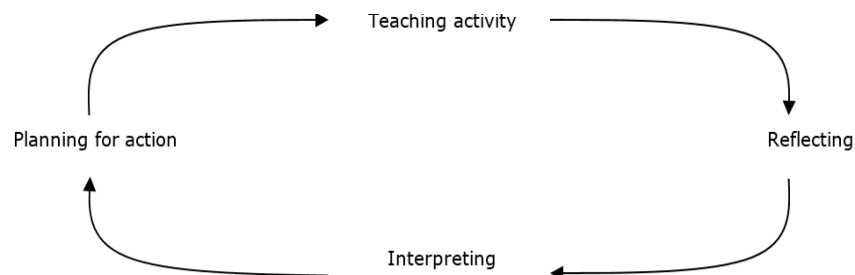


Figure 7 Experiential learning cycle (Kolb, 1984)

An interesting comparison may be found in the work of Susman (1983), from the information systems literature, which views the learning cycle of the information systems analyst as they seek to understand the information systems infrastructure of a client organisation.

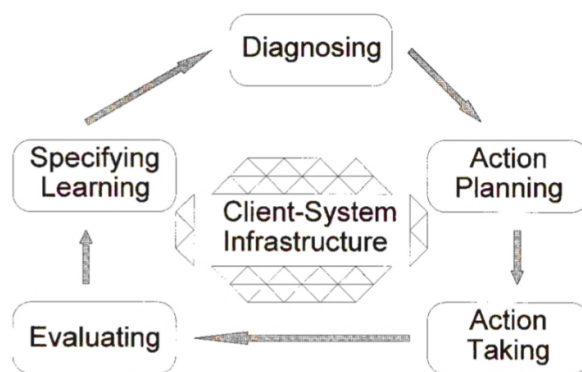


Figure 8 Canonical action research process model (Susman, 1983)

Whereas Kolb's model takes the perspective of the tutor - the designer of the interaction, Susman takes the perspective of the learner - the system's analyst.

<b>KOLB (1984)</b>	<b>SUSMAN (1983)</b>
	Specifying learning
Interpreting	Diagnosing
Planning for action	Action planning
Teaching activity	Action taking
Reflecting	Evaluating

Table 12 Comparison of stages in Kolb's cycle and Susman's model

Matching the different stages of each model in Table 12, the interesting difference of the focus on specifying the learning outcome in Susman's model is highlighted. That which is learned rather than that which has been presented / taught. In the terminology of the University, these are the 'Learning Objectives' stipulated in the catalogue entry and outline for each module delivered.

*"Teaching is just too damned difficult to get right. It is always possible to improve."*

Groccia and Buskist (2011:5)

The goal of teaching, while perhaps a personal philosophy, may be seen to be to optimise student learning (Saville, 2009). As a teacher, the researcher of this thesis has used many methods to teach and has experienced many different approaches to learning, both as a student and through interacting with students.

In their two studies of academic's beliefs about teaching and learning, Samuelowicz and Bain (2001, 1992) highlight the differences between teaching-centred and learning-centred orientations and, through their analysis, identify seven belief orientations: imparting information, transmitting structured knowledge, providing and facilitating understanding, negotiating understanding and encouraging knowledge creation.

As evidenced by the Confucius quote that opens this chapter, teaching is not a new vocation and research into teaching strategies is a relatively mature field, although the impact of new technologies on possible teaching strategies, the availability of information more generally and the expectations of students and teachers is significant. While traditional approaches to teaching still have relevance today, such strategies should be under constant review to align with the changing

environment and to the different environments in which they are applied. Just as medical practitioners should prescribe treatments based on 'scientific' evidence, so too should teachers adopt strategies for student learning that are supported by evidence (Saville, 2009). For example, the importance of environmental and interaction design in online collaborative groups, particularly in respect of Chinese students, was highlighted by Xu et al. (2014).

While traditional lecture teaching interactions may be still commonly in use in higher education, the effectiveness of this approach – a one-way communication process, is today openly questioned and it's weaknesses recognised, yet few modifications to the approach - bar the application of Microsoft PowerPoint to the interaction - would appear to have been implemented despite evidence to support change (Saville, 2009).

Liu et al. (2013) contrast their view of the college environment, to that traditionally held in Chinese research of a static variable in its influence over the student learning experience. Embracing Student Engagement theory, they see this environment as being dynamic and influential in motivating engagement of students in their learning. They summarise this environment into the Curriculum construction, Teacher guidance and Motivational nature of the campus culture and classify learning into three measurable constructs for their research (Table 13).

CONSTRUCT	ITEMS	DEFINITION
Autonomic cognition	Autonomic learning	Students can set own goals, determine learning contents and study pace, choosing appropriate learning methods and skills for themselves
	Thinking independently	Students can give full play to self-awareness and autonomy, considering the facts independently and thinking critically.
	Gathering information	Taking advantage of all the information sources available to them to obtain the information they need
Practical competence	Effective communication	Making students aware of the benefits of collective actions, taking active roles in group tasks, employing good communication skills for collective mutual growth
	Organising planning	Students set personal development targets, based upon their own considerations, designing the steps and training programs needed to achieve them within the available resources.
Emotional readiness	Moral values	Individual beliefs expressed in reflection and behaviour.
	Mutual understanding	The process of cognition building, by thinking from other perspectives to overcome the limitations of a personal perspective or psychological experience resulting from parochialism of personal standpoint.

Table 13 The three measurable learning constructs adopted by (Liu et al., 2013)

Taking this view of the university environment as dynamic and constantly changing based upon stakeholder change, changes in stakeholder behaviour, interaction redesign and other environmental/contextual factors seems natural, based upon the researchers own experience and the framework chosen by Liu et al. (2013) seems to fit well with the themes analysed within this research but it does lead one to reflect on what students actually learn, how they learn it and how this learning is measured.

Four styles of teaching and their impact on the learning approach that the style of teaching presupposes are discussed in Ho (2010) and laid out in Table 14.

TEACHING STYLE	PREFERRED TEACHING METHODS	PRIMARY LEARNING STYLE
Expert/formal authority	Didactic lectures, technology-based presentations, teacher-centred questioning and discussion	Dependent, competitive participant,
Personal model / expert / formal authority	Role modelling, coaching / guiding students	Participant, dependent, collaborative
Facilitator/personal model/expert	Case-based discussions, concept mapping, critical thinking, fishbowl discussions, guided reading, problem-based learning, role plays, student teacher of the day	Collaborative, participant, independent
Delegator/facilitative / expert	Contract teaching, class symposium, debate formats, small group discussions, independent study/research, modular instruction, panel discussions, learning pairs, student journals	Independent, collaborative, participant

Table 14 Four styles of teaching and the learning styles they require (Ho, 2010:160)

Designing teaching and learning interactions, to include focus on cultural aspects of collaboration and reflection on their own learning preferences, and those of other students, is also seen as an important strategy in enhancing student engagement in the learning process (Gram et al., 2013:763).

In terms of the frequency of learning interactions, Carrington (2010) offers a cautionary note from their research into accounting student performance in the USA context, where this performance was found to degrade where interactions were too frequent – in their case, more than twice a week.



One of the most problematic challenges of teaching may be in 'un-teaching' (a term used by a tutor participant) that which has been learned or conceived - adjusting from one way of thinking to another (Rolheiser and Ross (ND), Chew (2005)). As a practitioner teaching sport, in the role of Technical Director of rugby for the state of Minnesota during the 1990's, the author soon discovered that teaching rugby techniques to female players was much simpler than teaching their male counterparts. Upon investigation it transpired that this was related to the techniques learned by boys at high school, from their American football coaches. The purpose of the rugby programme was not to make athletes worse American football players, but better – and safer – rugby players. Making students aware of the differences between the games and the reasons for employing different techniques helped them to make this transition, reduced the likelihood of injury and dispelled the myth that rugby was a dangerous game because it was 'American football without padding' – which would be a dangerous game indeed!

The goal was not to convert American football players into rugby players, but rather to enable American football players to play rugby - not to 'unteach' what they knew, but to recognise the contextual difference and adapt their way of playing to the different context – to compartmentalise the new skills they were acquiring. Indeed, part of the coaching process was to embrace techniques from other sporting disciplines, such as wrestling and football, which might be adapted to improve performance in the rugby context.

The concepts of 'unlearning' are examined by Conner (2010) in the context of teacher education and are seen as a process of uncovering, examining, and revising assumptions about a phenomenon. The recognition of prior assumptions and the re-contextualising of them enables what might at first have appeared to be conflicting assumptions, to be reconciled through framing within their contextual difference.

The same may be argued in the context of Chinese business school undergraduate students, trained to perform, think and learn in one way, then playing a different yet related game, where they are expected to perform, think and learn in another and to be assessed based upon their performance against this different set of rules.

In the business school classroom, perhaps particularly within a British university with mainly Chinese students, set in the Chinese context, such misconceptions and previously experienced approaches to teaching, learning and ways of thinking may have a major impact on what is noticed, what is learned and what is forgotten (Chew, 2005). Such a changes may in part be seen in the differences between high school education and further education – something remarked upon in the UNNC undergraduate student manual - and a change that would therefore be experienced by most if not all undergraduate students upon entrance to university. In addition, while the teaching and learning models employed in Chinese education are undergoing reform, they have historically and continue to be, significantly different to those employed at NUBS in China (Li (2009), Murphy and Johnson (2009), U.N.N.C. (2016)).

Add to these differences in conception, other changes being experienced by Chinese students, as the nature of China and social re-construction of what it is to be Chinese gradually develops (Faure and Fang, 2008), then the complexity of the alignment of teacher expectation to student expectation may start to come into focus.

A recent study of changes in pedagogy between 2005 and 2008 noted a reduction (9%) in tutors adopting the traditional lecturing approach towards more student-centred approaches and an increase (15%) in the use of collaborative learning in small group projects, was noted in the American context by (Groccia and Buskist, 2011:10).

### 2.3.3.12. Communication

In the ontology and epistemology sections of this thesis, reflection is made on what presumably occurs in each of our minds to understand the way in which we conceptualise the world around us. Communication is what happens when we (the source) try to externalise this internal conception. It is important to recognise that communication does not imply understanding on the part of that receiving a communication (the receiver). Communication is not about language or speech, although these are means of communication, nor does it require face-to-face or co-synchronous interaction (Jaccard and Jacoby, 2010:16-17).

Communication is the process whereby a source transmits a message over a medium to one or more receivers (Jaccard and Jacoby, 2010:16-17). Initiating the process requires the source to convert an internal concept (a '*meaning structure*') into some external symbol (a '*surface structure*') that can be conveyed to the receiver (Jaccard and Jacoby, 2010:17). Different '*surface structures*' may be used to convey the same '*meaning structure*' but problems (miscommunications) occur when the meaning of a '*surface structure*' differs in a communication between two people (Jaccard and Jacoby, 2010:16-17). People with different frames of reference, teachers/students, IT leaders/business leaders, investors/managers, can use the same '*surface structure*' to communicate very different meanings (Auer-Rizzi and Berry (2000:285), Jaccard and Jacoby (2010:19)).

### 2.3.3.13. Knowledge

*'What do people want, when they want knowledge?*

*Nothing more than this: Something strange must be converted into something known.'*

Uit Beijerse (1999:94)

*'Knowledge is alive because it changes continuously... through human interaction'*

Nonaka (1994)

One view of data is that it represents facts that are collected and stored about resources (e.g. goods, materials, time), events (e.g. sales, purchases, changes etc.) and agents – that which causes change, (e.g. people) (Romney and Steinbart,

2012:27). Another view of data would be that of the symbols externalised by sources of communication (Jaccard and Jacoby, 2010:16).

Information is data that has been received, collected and processed to provide meaning or to enable meaning to be inferred from the data, resources, events or agents concerned to enable knowledge (Jaccard and Jacoby, 2010:16).

Codifying knowledge enables the social experiences of the past to be accumulated, managed and made available in order to guide the present and we depend on language for this communication, codification and storage of this knowledge (Sutton, 2001:80).

In his influential paper, Nonaka (1994) presented a dynamic theory of knowledge creation, describing information as a flow of messages; knowledge being created and organised by this flow in a conversion process between tacit and explicit knowledge (Table 15).

	TACIT KNOWLEDGE	TO	EXPLICIT KNOWLEDGE
TACIT KNOWLEDGE	Socialisation		Externalisation
FROM			
EXPLICIT KNOWLEDGE	Internalisation		Combination

Table 15 Modes of knowledge Creation - Adapted from Nonaka (1994:19)

Tacit knowledge may be defined as inherently personal knowledge, underlying the tasks that we perform without thinking and that we find difficult to explain (Zappavigna and Patrick, 2010). Explicit knowledge appears to be a more contested concept, some maintaining that all knowledge is either tacit or rooted in 'tacit' knowledge, the problem being that externalising such knowledge requires the codifying process of language. Thus, although extensive research has been undertaken at devising best practices for eliciting the externalisation of implicit knowledge, it must be recognised that 'individuals cannot be asked to state what they cannot readily articulate' and so alternative methods, which often require the analysis of language or pictures, must be considered to attempt to do so (Zappavigna and Patrick, 2010).

The goal of information is to provide decision makers with the basis for knowledge while the main aim of collecting such information is to allow accurate and relevant knowledge to be derived within a time-frame that renders the knowledge useful, so that decisions can be as informed as possible with minimised exposure to uncertainty and risk (Jenkins and Witzel, 2000).

One view of knowledge creation in a western study group setting is that '*We construct and maintain knowledge not by examining the world but by negotiating with one another in communities of knowledgeable peers.*' Constructivism is therefore seen to foster active learning over passive learning, collaboration over competition, and community over isolation (Li and Campbell, 2008:205).

These definitions of knowledge may not match those held in China and such contextual differences need to be explored (Jenkins and Witzel, 2000). While there are dangers inherent in analysing non-western philosophy from a western perspective, it would appear that, in Chinese thinking, knowledge relates to how things are known, the principle purpose of intellectual pursuit being to find a way ('*dao*'); not a 'what', but a 'how' (Jenkins and Witzel (2000), Leezenberg (2005:2)). The Taoist theory of '*wuzhi*' or 'not knowing' perhaps can be equated to the western concept of a 'given', or common knowledge, where no line of reasoning supports the knowledge, yet the fact is established (Jenkins and Witzel, 2000). In the west such knowledge may also be considered 'intuitive' yet, whereas in the west such knowledge is considered inferior, in China it is considered of equal value (Jenkins and Witzel, 2000). This view of knowledge as the stored potential for action is one that crosses the boundaries between western and Chinese thinking.

#### **2.3.3.14. Learning**

There are broadly speaking two perspectives to understanding the concept of learning - the acquisition metaphor and the participation metaphor (Paavola and Hakkarainen, 2005).

The acquisition metaphor aligns to a constructivist view, seeing knowledge as acquired by the individual's mind, as a container of knowledge, and learning as a means of filling that container (Paavola and Hakkarainen, 2005).

The participation metaphor views learning as an interactive process involving participation in cultural practices and shared learning activities, focusing on those activities rather than their outcomes - the 'knowing' rather than the 'knowledge' (Paavola and Hakkarainen, 2005). As such, knowledge is not recognised as existing either in a world of its own or in individual minds, but as an aspect of participation in these social practices.

Taking the latter view, Jaccard and Jacoby (2010) see the improvement and expansion of personal understanding to be dependent on the communication among individuals of internal conceptual systems through socially based approaches using externally observable shared symbol systems. Extending from the arguments made on recognising limitations in the introduction, it is important to recognise that no one system of thought or perspective can provide an exhaustive and comprehensive understanding (Jaccard and Jacoby, 2010:23)

*"Science, construed as procedures of knowing and persuading others, is only one form of knowing by the rules of one game. There are other games in town, some like art more intuitive, some like religion more determined by revelation and faith."*

Jaccard and Jacoby (2010)

Adopting a Confucian/Socratic framework Tweed and Lehman (2002) reflect on cultural differences in the perceptions of learning between the 'west' and China. The differences highlighted in their work have been summarised in the following table (Table 16).

<b>SOCRATIC</b>	<b>CONFUCIAN</b>
Tendency to question	Effortful learning
Tendency to evaluate	Behavioural reform
Esteem for self-generated knowledge	Pragmatic learning
Focus on error to evoke doubt	Acquisition of essential learning
Search for knowledge, not true belief	Respectful learning

Table 16 Summary of Socratic and Confucian perceptions of learning (Tweed and Lehman, 2002)

These differences in perception can lead to differences in behaviour and willingness to communicate in learning contexts (Tweed and Lehman, 2002). The centrally controlled 'cultivation' of Chinese students has been considered inherently problematic, although questions about the development of strategy to improve the quality of higher education in this context remain unanswered (Liu et al., 2013).

The Western constructivist approach, embracing student-centred learning, involves the process of pro-active involvement in their personal development through social interactions – their integration into and with society. The role of the tutor being that of facilitator, guiding students to help them create and build their own experience, rather than one of 'mechanically stuffing students' minds' with the tutor's own knowledge and experience (Liu et al., 2013).

The development of shared or unified interpretations of environmental events, is one of the goals of such interpretive learning, but this is not dependent on achieving consensus, but rather on the generation and understanding of different interpretations of those environmental events (Hines, 2000).

### **2.3.3.15. Collaborative problem-based learning**

About 2,500 years ago, Confucius (512-479 BC) identified the key practical skills obtained during collaborative projects:

*"Tell me and I will forget. Show me and I may remember. Involve me and I will understand"*

Lynch et al. (2007)

About 100 years ago, the Harvard Business School chose case studies as an effective method of teaching - today this participatory and collaborative learning approach, is widely used around the world (Mauffette-Leenders et al., 2007:1).

This Socratic approach to teaching, uses descriptions of a business context to explain and explore possible decision points – the participants in the case study analysis working in teams, or individually, then explaining their response to the given situation (Mauffette-Leenders et al., 2007:1). This does not give students exposure to business decision-making, since action in practice would be the only

way to achieve this, however the use of case studies is seen as a powerful interactive learning tool which, while not introducing the gravity of business decision-making, succeeds in bringing the complex and dynamic 'reality' of business analysis into the classroom (Starkey and Tempest (2009:582), Wastell (2011:150)).

One perceived danger in the case study approach, as raised by Starkey, is that the choice of information sources in presenting the case study context, tend to be focused on management perspectives, rather than being balanced between the various actors in the scenario (Mauffette-Leenders et al., 2007:1). This would lead students to take on a distorted view of relevant information sources in discovering evidence to support business decision-making. As reflected upon in the epistemology and ontology sections of this thesis, representations of Reality will be dependent on the sources of information used, the materials, the painter and the observer.

The Mauffette-Leenders et al. (2007) text, draws from the experience of many teachers who have used case studies over three decades and thus may be seen as a good starting point from which to extend this study into the Chinese context. 'Strong' evidence to support the hypothesis that case studies were appropriate for use in the Chinese context was found in their research involving business school MBA students in Beijing by Thompson (2000). The evidence from this research, also suggesting that decisional, rather than illustrative, cases set in familiar contexts, were most appropriate.

If the argument is accepted that, without assumptions being made, case studies cannot convey the detail of a business context, then we need to look at ways to adapt this approach to provide that missing contextual detail to the students.

Collaboration, or the activity of working together to achieve a common goal, involves communication, cooperation and responsiveness between those people involved in the activity (Hesse et al., 2015:38). Collaborative learning, the term for



which has been used interchangeably both in practice and in the literature, with cooperative learning, group learning, peer learning, learning community and constructive learning, has become a common practice in western education (Li and Campbell, 2008:205). In such approaches the student cohort is divided into small groups to learn content knowledge by engaging in case studies or projects to promote idea exchange and insight sharing (Li and Campbell, 2008:205). The approach is seen as valuable in:

- promoting retention rates;
- providing counselling to students with cognitive, physical, social, and emotional problems,
- enhancing their interpersonal communication skills
- developing positive interdependence, individual accountability, collaborative and conflict
- management skills
- recognising and valuing the different intellectual contributions made by group members from different social cultural backgrounds (Cohen 1994); and allowing students to reflect and respond to the needs of workplaces in industries where team building, cooperation and collaboration are highly emphasised.

(Li and Campbell, 2008:205)

Li et al. (2013) remark on the need for more student perspective research to be conducted into the coping practices of Chinese students in adjusting to tutor-initiated group work. They suggest that student-initiated group-work is common practice within the Chinese context - much of this being regulated through Ministry of Education channels – the difference between those investigated in the extant literature has been tutor-initiated and assessed.

In the 2012/13 cycle of this research a problem-based approach was taken. The problem-based approach to learning is designed so that students can engage with 'realistic' problems in a known context by collaborating with each other, activating prior knowledge, identifying what they do not know, constructing new knowledge and developing a strategy for how to proceed (Yandell and Giordano, 2009).

The main advantage of the approach, which is seen as appropriate and culturally compatible to the Chinese context (Lee et al., 2004), may therefore be seen to be

motivation: knowing why you are learning something – to solve the problem – in addition, by placing the problem in a known context within which to store the information, later recall is facilitated (Yandell and Giordano, 2009).

The Problem-Based Learning (PBL) approach, aims to foster student motivation, reflection, creativity and learning by engaging students in analysis, discussion and problem-solving activities (Knudsen, 2013:1). The approach is also seen to have value through the development of strong collaboration and organisation skills among participants in such studies, is theoretically founded in Western Critical Theory and there is an argument that this approach might also have problems when applied within a different context (Gram et al., 2013:764).

When bringing groups of people from different cultural contexts into a working group, the possible impact of such cultural difference should be highlighted and discussed (Blasco, 2014). Even where such difference may lead to confrontation, as was the case in the initial interaction that gave rise to this research project, such open discussion enables the development of strategies to overcome them (Ashburn-Nardo et al., 2008).

### **2.3.3.16. Reflection**

Taking these frameworks of understanding about the nature of learning, knowledge and the creation of knowledge in teaching and learning it would seem that the high-road to learning is through sharing personal understanding and community experience and, we might conclude, as have others above, that collaborative group discussions seem an appropriate approach to knowledge acquisition by the individual and group.

Having identified the literature iteratively, it became clear that, due to the duration of this research project, new research was being published regularly. The attention currently being invested in this field of study demonstrates the relevance of this research and adds pressure to ensure that publications be made from it soon.

## 2.4. Reflection on literature review

In this chapter, a process for review was selected that met with the over-arching theme of evidence-based design, although the focus was informed initially by the experience of the supervisors and the taught content of the PhD programme. As with any project, the management of 'specification creep' – the change in the specification, focus and priorities of the project, during the course of its completion - was an important factor and part of a significant learning process.

Due to the grounded nature of the initial stages of this research project, the journey taken started without knowing the final destination, so it did not proceed as the crow flies – assuming a crow knows where it is going. The seemingly constant review and change to content and foci was, as a result, quite labour intensive.

Saunders et al. (2012) represent this, now familiar, pattern of the flight path of a typical literature review, as follows:

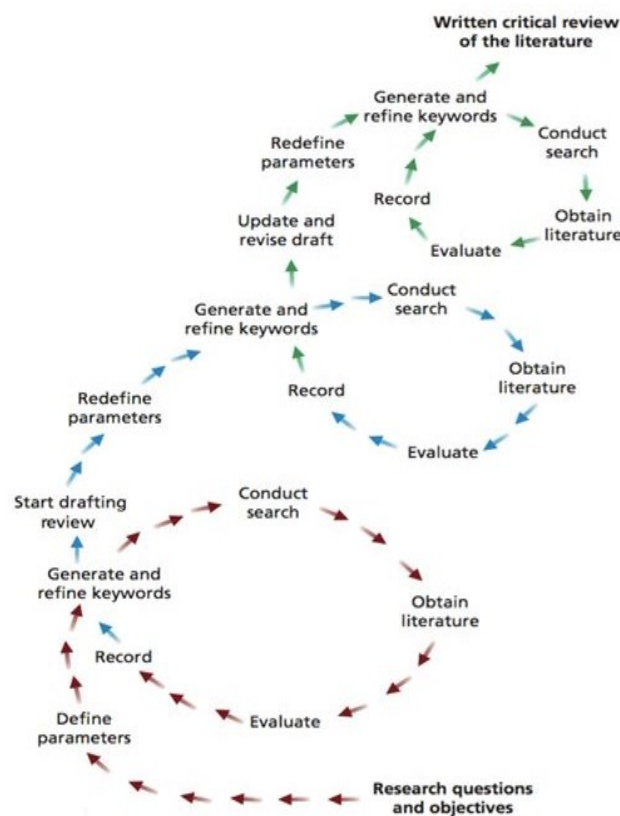


Figure 9 The Literature review process (Saunders et al., 2012)



## **3. Methodology**

### **3.1. Introduction**

In this chapter, first the ontological and epistemological assumptions underlying the research methods chosen in this research are discussed.

Extending from the discussion of the critical post-modernist or realist approaches which challenge the assumption that researchers are neutral in their research (Denzin and Lincoln (2011) and Jaccard and Jacoby (2010:306)), it is recognised that in selecting a particular method of inquiry, an associated set of pre-suppositions may also have been adopted that need to be identified and brought into the open before a balanced view can be taken, both by the researcher and the reader of the research.

The second section then examines the nature of qualitative methods, the main approach finally selected for this research in Section 4.2 - Method selection process.

## **3.2. Epistemology and ontology**

### **3.2.1. Introduction**

Ontology, concerned with the nature of reality, is a fundamentally personal question and so, before considering the academic frameworks, the author first expresses how they perceive reality. The epistemological or ontological assumptions of an approach taken in social science research are not dictated by the method or methodology but rather by the stance of the researcher and how the researcher chooses to use them (Brown, 1992:393).

This section discusses the frameworks then considers the assumptions that are being made in this research, both by the researcher as individual and, by implication, of the methods that have been chosen.

### **3.2.2. Nominalists, constructivists, realists, et al.**

Nominalists would view reality simply as a product of consciousness – i.e. you are my imaginary friends (Hines, 2000:8).

Constructivists recognise individuals not as imaginary friends but view sense-data as individual perceptions and not Reality itself and, since we cannot remove this filter i.e. stand outside ourselves, we are unable to be certain of Reality (Spender, 2008:56). Such views recognise imperfections in our interpretations of Reality - that we only find meaning in our perceptions by referring to 'frames of meaning' that we have already imagined (Spender, 2008:56). There are several schools of constructivism, a popular variety being social constructivism which holds that all human knowledge is warranted by our social processes and thus that an individual's reality is a social construction (Spender, 2008:56).

Classical realists adhere to the view that Reality exists independently of it being perceived – modern realists take the view that there is something 'out there' to study – 'out there' as opposed to 'in there' i.e. in the mind (Hunt, 2008:181). Such views are reliant upon trust that shared knowledge is Real (Hunt, 2008:183).

Finding a way around the apparently irresolvable differences (Burgoyne, 2008:64) between the realist / positivist and constructivist / interpretivist viewpoints are the critical and pragmatic realist approaches.

Critical realists hold that it is a mistake to start with an epistemological assertion. There are some events that we can predict and there some that we cannot. While some events can normally be predicted and an underlying pattern or explanation might be found, even normally predictable events sometimes do not occur, varying with situation and context (Burgoyne, 2008:64).

ONTOLOGICAL PROPOSITION	WHAT IS REALITY?
Critical Realist:	Reality is an open system with emergent properties
Classical Realist:	Reality is a closed system
Constructionist:	Reality is nothing but the meaning we individually and collectively give to it

Table 17 - Reality views of different ontological propositions (Drawn from Burgoyne (2008:65))

Pragmatic realists retain the view of a Reality, while judging and using representations of Reality based upon their utility i.e. if value can be extracted from an 'interpretation' (reality construct), or it does the job it is intended to do and enables advancement of understanding, then using it makes sense, until a better reality construct is discovered (Watson, 1997:6).

### 3.2.3. Positivist and phenomenological research paradigms

Positivism is an approach of assertion, following more traditional scientific approaches, where normally a hypothesis is developed (induction) and tests conducted, often in a quantitative / empirical way, which either prove or disprove the hypothesis (deduction) (Hines, 2000:8). Advocates of positivism, within the social sciences, argue that Reality may only be experienced through sense data and that, to reduce data distortion, research findings should only be considered reliable if they can be repeatedly verified (Clegg, 2008:155).

Phenomenology, on the other hand, is a method of explaining underlying meanings by focussing on the subject's unmediated awareness of a phenomenon, thus recognising that in order to understand meaning, the originating influence of

the subject that experiences the phenomenon needs to be taken into account (Holt, 2008:152). Such a paradigm must therefore accept an element of reflexivity, or awareness that the researcher also has an influence on the process and outcomes of their research. This recognition opens up something of a conundrum, since new knowledge can only be created from a stated perspective so that readers of the asserted knowledge can take this perspective into account (Anderson, 2008:184-185). To do so, the researcher must not only be clear in stating their epistemological stance, but question it and perhaps reframe it as they proceed (Anderson, 2008:184-185).

Positivist and phenomenologist stances may be seen to be two diametrically opposing philosophical stances and the ontological implications of each position are often seen as being mutually exclusive (Hines 2000:8). Drawn from Hines (2000:9), Table 18 below provides a useful summary of contrasts between the two paradigms.

	<b>POSITIVIST</b>	<b>PHENOMENOLOGICAL</b>
Basic Beliefs	The world is external and objective	The world is socially constructed and subjective
	Observer is independent	Observer is part of what is being observed
	Science is value free	Science is driven by human interests
Researcher should	Focus on facts	Focus on meanings
	Look for causality and fundamental laws	Try to understand what is happening
	Reduce phenomenon to simplest elements	Look at the totality of each situation
	Formulate hypotheses and test them - deductive reasoning	Develop ideas through induction from data
Preferred methods include	Operationalising concepts so they can be measured	Using multiple methods to establish different views of phenomenon
	Use large samples	Small samples investigated in depth or over time

Table 18 - The positivist and phenomenological paradigms (Hines, 2000:9)

Positivist and interpretive paradigms may be seen at opposite extremes of a continuum of research methodologies, each methodology itself moving along the continuum, depending upon the researcher's underlying philosophical assumptions.

### **3.2.4.Placement within the frameworks**

The assumption that the world and reality are objective phenomena but with unknown properties and dimensions, holds that people socially and symbolically construct organisational realities (Berger and Luckmann (1990), Crotty (1998))



and that the understanding of them, represent the perceptions and interpretations of people in the context of historical and social practices (Crotty, 1998).

Thus, to categorise the author's ontological and epistemological stances and weave them into the framework of knowledge philosophy, in daily life they would not appear to be extremist, but may indicate a natural born phenomenologist – with realistic tendencies. The recognition, that different views are taken in going about daily life, leads one to conclude that the author may naturally gravitate towards a pragmatic realist standpoint.

The pragmatic pluralist viewpoint (Watson, 1997) holds that personal stances need not prohibit the use of methods that make different ontological and epistemological assumptions, so long as the methodological assumptions are consistent with each other. Taking such a view enables the researcher to select those methods that best suit the questions for which the research is seeking an answer, as long as this associated baggage is recognised and taken on board.

RESEARCH METHOD	GUIDING PARADIGM	ONTOLOGY	EPISTEMOLOGY	RESEARCH PRACTICE
Focus groups (Co-operative inquiry)	Participatory	Unity of natural and social world Outer world as objectively given and subjectively represented Humans are integral part of this world and self-determining.	Co-creation of definitions of reality	Scientist as co-researcher and co-subject
Case studies	Constructivist	Relativism Local and specific constructed realities	Transactional / subjectivist Created knowledge	Dual role of scientist: immersion and objectification
Action research	Participatory [Reason(1994) notes that action research is not fully participatory as it is still largely the researcher who defines the topic, issues and problems from the perceptions of the practitioners in their particular context]	Unity of natural and social world Outer world as objectively given and subjectively represented Humans are integral part of this world and self-determining	Co-creation of definitions of reality	Scientist conducts research on people

Table 19 - Research methods and their guiding paradigm, ontology, epistemology, and research practice (adapted from Peppard et al. (2000))

Through embracing Dooyeweerd's (1995) and Klein and Myers' (1999) views, Basden (2011) attempts to provide a '*proper philosophical foundation*' rather than a liaison '*of convenience*' to resolve the integration of interpretive and socio-critical approaches in IS research. As a guiding set of principles, the clarity of the Klein and Myers (1999) framework was finally preferred over Basden (2011) in this

research and was used to both guide and assess the decision-making processes, design and execution of this project.

### **3.3. Reflection on methodology**

*"Essentially, a pragmatist outlook implies an interest in change and how people bring about and respond to change. To engage with the action character of the empirical field is at the core of pragmatism."*

(Ågerfalk, 2010)

Both education and information systems are often seen as a pragmatic disciplines with a focus on applied research with both practical and theoretical outcomes (Ågerfalk, 2010) and, with that accepted, this research and researcher would seem to fall within that same pragmatic category.

The debate over the issues involved in combining research philosophies rages on (Ågerfalk (2010), Myers and Klein (2011)) and so, while it may be healthy for the field of study that such debate continues, a new arrival to the field might easily be discomforted when looking for an endorsed precedent for their way forward.

# 4. Research method

*"knowing what you want to find out leads inexorably to the question of how you will get the information"*

Miles and Huberman (1994:42)

## 4.1. Introduction

Having discussed the epistemological and ontological influences of the researcher on this research and recognised the underlying assumptions in the previous chapter, the purpose of this chapter is to explain the rationale behind the method selection process for this research. Due to the nature of the questions being addressed in this research (the how, why and what), more interpretive and qualitative approaches, as discussed in section 4.2.2, may be considered appropriate to finding their solutions (Miller and Glassner, 2004).

As discussed in the introduction, this research is conducted in three phases, Grounded Investigation (GI), Strategy Development (SD) and Action Research (AR), each addressing one research question and then informing the following phase:



Figure 10 Relationship of research phases to research questions

The nature of each phase is different and, since each phase informs the following phase, the approaches taken in each needs to be considered separately.

To support this method selection process, Trauth's (2001) framework is adopted as a guide. In the first section this framework is discussed and applied to each phase of the research, a process which helped define the phase names, and in the second section the methods thus selected are detailed.

## 4.2. Method selection process

*"[H]aving learned to read faces in a standard way we make standard judgements and are led astray"*

Feyerabend (1993:167)

### 4.2.1. Introduction

In this chapter, Trauth's (2001) framework of analysis was adopted in selecting a research method, resulting in an interpretive research tradition finally being selected. According to this framework, there are five factors that should influence the choice of research methods:

1. The research problem,
2. The degree of uncertainty surrounding the problem,
3. The skill of the researcher,
4. The researcher's theoretic lens and
5. Academic politics.

In the following sections, the impact of these five factors is assessed in relation to each phase of this research, reflected upon and then, in section 4.3, the methods thus selected are detailed.

### 4.2.2. The research problem

The first influencing factors within Trauth's (2001) framework are the research problem and the questions being addressed.

The researcher had the ability to control certain aspects of small collaborative group interaction design. This research was about gaining insights into the influences over student engagement to which the researcher can apply direct action (Balakrishnan and Claiborne, 2016). The final goal of the research being to identify strategies to improve or assist in the engagement of the group in achieving the specific learning outcomes of the interaction.

In this research the questions focus not only on the 'what' but also upon the 'how' and the 'why', this study may therefore be seen as exploratory in nature and so positivist approaches should be rejected in favour of more interpretive approaches (Miller and Glassner, 2004). Such approaches would allow for an

exploration of 'how' the participants in the research view their situation and 'how' they give meaning to their experiences.

In the following sections, the research problems for the three phases of this research, the GI, SD and ET Phases are discussed.

---

In the GI phase of this study the research question being addressed is:

1. What influences engagement in small collaborative groups?

Feedback from a learning community forum had indicated that there was a problem in the small group interactions at the school, yet there seemed to be no consensus as to what those problems might be. Therefore an exploratory approach was required to enable the research to be focussed.

Strauss and Corbin (1998) assert that grounded theory is suited to the capture of interpretive experiences and for developing theoretical propositions from them. The application of grounded theory is also seen as appropriate when the focus of the research is explanatory, contextual, and process oriented (Eisenhart, 1989). Furthermore, this approach has been effectively adopted in other recent IS research (Urquhart (1997), Urquhart (2001), Galal (2001), Kautz et al. (2004), Campbell (2005)) to develop theory of IS practice (Rowlands, 2005) and educational research (e.g. Chong and Yeo (2015)).

---

In the SD phase, the research question being addressed was:

2. What strategies can be developed to address these influences?

The approach could no longer be grounded, since it took as a starting point the themes identified in the GI phase.

It would not be uncommon for qualitative approaches to form the foundation of quantitative research. An example of such an approach taken in the Chinese

context is the study conducted by Kaigler-Walker and Gilbert (2009) where focus group discussions were used to develop a questionnaire used in a subsequent quantitative survey. However, in this research, the GI phase addressed the question of themes and the following SD phase was looking at strategy to address them. While related, the themes identified in the GI Phase would not lend themselves to a survey on strategy to address them. So the approach would still need to be interpretive as the differing perceptions of people involved in these processes, about strategies to address these themes, were the focus of the investigation.

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In the AR phase, the research question being addressed was:

3. How, why and what would be good practice in implementing such strategies?

This last question posed a slightly different problem, since it required the pragmatic testing of different approaches and observing the impact of these approaches in achieving the desired result.

Answering this question would require the experimental construction of knowledge towards improving design in iterative T&L interactions and would involve the collaboration between the researcher, tutors, students and other cultural insiders. However, experimental research generally depends upon a controlled environment to enable cause and effect to be measured and compared.

Approaches involving concurrent differences in teaching approaches to experimentally test the impact of the design difference of the learning interactions were considered unsuitable. As a teacher, the focus of the interaction design is to enable each student to learn as much as possible, adjusting approaches in reaction to the perceived needs of the individual with whom they are interacting (Thorsten, 2017:145). To isolate a group of students for different treatment, where the teacher perceives this to disadvantage them, would therefore not fit within the

researcher's teaching philosophy, nor would it be considered ethical. Such concerns would be allayed if several teachers were involved in the T&L interactions of this research, each designing their own interactions, but this was not possible within the context of this research. Furthermore, with the involvement of 9 or so groups of different people in each iteration and external influences over the environment, a reliable control group would not be possible (Heinze, 2008).

With this inability to isolate variables, it would therefore not be possible to determine exactly which change in variable had led to which result, no matter how many T&L iterations were available. This change and volatility, impacting on the investigation of human and social phenomenon, is recognised and lamented in across the literature (For instance Checkland and Holwell (1998:11), Dowling et al. (2003), Mackenzie et al. (2011)).

Despite the more positivist leaning of the third question, the scope for selecting quantitative approaches was also limited by the relatively small number of participants in each iteration of the study.

Qualitative research is, by its nature, particularly difficult to define (Van Maanen:xii) and attempting to do so, simply by contrasting it to quantitative research, is problematic (Silverman, 2006).

It is associated with an interpretive research tradition, and addresses questions about 'how social experience is created and given meaning and produces representations of the world that make the world visible' (Gephart, 2004:455).

Denzin and Lincoln (2011) describe qualitative research as interpretive and naturalistic cutting across academic fields, disciplines and subject matter, giving it a somewhat rebellious image, but perhaps well suited to application in management research. Drawing from the work of van Maanen, Denzin and Lincoln, Gephart (2004) describes qualitative research as a re-humanising, naturalistic and interpretive approach, emphasising qualities of entities and meanings generated



by the 'social actors' from their experience of the environments in which they perform.

Delbridge and Kirkpatrick (1994:39) contend that without adequately understanding the meanings of social actors, their behaviour cannot be explained, which reflects the importance of understanding symbols and meanings, the signifiers and signified (Saussure et al., 2011), if understanding of underlying meanings is to be established.

Summarising these sources, good qualitative research may be seen as research that:

- Emphasises humanistic and naturalistic interpretation.
- Departs from laboratory conditions.
- Immerses the researcher in the environment of the researched.
- Is flexible, holistic and discovery oriented.
- Is recursive in nature, revisiting and reaffirming findings in recognition of the dynamic nature of the studied environment.
- Uses multiple approaches to triangulate results and further validate the study.
- Provides explanations behind answers rather than the answers themselves.
- Recognises the influences of semiotics and of the interactions between the researched, the researcher and the reader of the research.
- May be specific to the study and have limited external validity.

Qualitative research provides a means of gaining new in-depth insight into an environment and has become increasingly important in both social science and applied fields of study where it has opened up a class of research questions that were not previously accessible under the rigid techniques of experimental science. When researchers step out of the laboratory and enter the natural settings that they seek to study, more flexible, humanistic, illuminating and insightful interpretations can be made, but this departure from the clinical research environment poses new problems to researchers that need to be recognised when collecting and analysing data and when reading such research (Marshall and Rossman, 2011).

Verifying qualitative data for *reliability* - how consistent the findings are, *validity* - whether the study actually investigates what was intended and whether the findings can be generalised and applied to other environments, can be difficult. One method is to take transcripts, or analysed results, back to some of the interview participants and ask them if this is really what they meant (Kvale, 1996), but this is dependent upon the original actors being available and co-operative.

While Guba and Lincoln (1989, 2001) discuss the concepts of confirmability, dependability, credibility and transferability as alternative ways of ensuring quality of data in qualitative evaluations, qualitative case study research is inherently un-transferable although, through its depth of analysis and triangulated validation, it can perhaps be seen as one of the most solid forms of qualitative research. Extended validity has been argued in research employing case cluster methodology where a single unit within a larger case is randomly sampled, and that data treated quantitatively (Mcclintock et al., 1979).

The accuracy and reliability of a qualitative study can be further enhanced by expanding the range of qualitative research methods employed. A coordinated, triangulated strategy employing different approaches to the study of a research question can heighten the certainty with which that question is answered (Hall and Rist, 1999). Marshall and Rossman (2011) see a qualitative study's transferability to other settings to be problematic but, as long as the researcher accurately identifies the limitations of the findings, their application to other populations might be considered. The *caveat emptor* disclaimer (Guba and Lincoln, 1989) speaks volumes in itself about the dangers of blind generalisations of their work.

This critical post-modernist or realist approach challenges the assumption that researchers are neutral in their research (Denzin and Lincoln (2011) and Jaccard and Jacoby (2010:306)) and has helped to legitimise research, by revealing agendas that might otherwise have remained hidden, both to the researcher and the reader. Saussure et al. (2011) talk about differences in semiotic meaning,

raising the potential dangers of 'Chinese whispers' in the supply chains of academic pursuit. Thus, one of the main challenges facing the qualitative researcher, in validating their findings, may be seen to be in recognising and minimising the extent to which they may have biased their own research (Marshall and Rossman, 2011).

Chan and Reich (2007) highlight criticisms of management science for its use of theoretical and artificial constructs in identifying naturally occurring phenomena. Seeing information systems as more mechanistic and business as humanistic and chaotic, and bearing in mind assertions for the need for multiple sources of data (Guba and Lincoln, 1989), it would seem reasonable in gaining understanding in this field, for both positivist and interpretive approaches to be employed. If one views such study to focus on alignment between man and machine - the humanistic and the mechanistic, then perhaps a balance in approaches or more mixed methodological approaches might be anticipated.

While Hackman's (1988) opening phrase 'It is probably significant that I do not want to be writing this right now.' may be seen to go too far when reflecting on a researcher's impact on their research output, the above insights suggests a need to achieve balance between research approaches and that neither qualitative nor quantitative approaches provide a sure footing, if taken in isolation. This would then also seem to draw into question much research that has gone before. This is of concern since, just as Hines (1988) so eloquently argued the construction of reality by financial accountants, researchers would appear to be constructing reality, through their statements, in much the same way.

Ethnographical approaches, where the researcher inserts themselves into a social interaction to observe behaviour, might have been considered. Such approaches typically enable insights to be gained into such human interactions. Within focus groups, participant observers might be seen to fall within this general area. In ethnographic approaches, researchers typically aim to minimise their influence over the interaction, which might be more possible where the researcher can be accepted more as an insider to the community, such as in the work of Russell (2005). However in this research, but the researcher had a change agenda and, since they also played the role of tutor in these interactions, influence over their outcomes was essential to the study (Heinze, 2008).

While the results of surveys informed the study, these surveys formed part of the normal evaluation processes at the University and due to their timing, they were not available as a mechanism to influence the current iteration of the interaction design, but the qualitative feedback comments were used as an additional source of evidence to enable triangulation in informing the design of subsequent iterations.

The iterative nature of the phenomenon under investigation and the involvement of the researcher within the interactions, led the search for a research method towards action research, design science and an experimental and iterative approach, rather than a linear progression from research to development and dissemination (Shah et al., 2007).

From the field of IS research, while arguing the similarity, difference and compatibility of action research and design science, Papas et al. (2011:149) draws from the literature to tabulate a comparison between the two approaches (Table 20).

	<b>ACTION RESEARCH</b>	<b>DESIGN SCIENCE</b>
<b>Epistemology</b> (relationship between inquirer and the known)	Research occurs in a natural environment. Rooted in constructivist ideas. An interpretive epistemology is the most common, but positivist and post-positivist are possible	Research occurs in a natural environment. Rooted in pragmatism. Interpretive and post-positivist epistemologies are possible.
<b>Axiology</b> (ethical, aesthetic and spiritual considerations)	Practice is improved and learning has taken place. Participant practitioners may benefit from the research.	Practice is improved by the development and use of artefacts. Participant practitioners may benefit from the research, but utility of artefact is paramount.
<b>Ontology</b> (nature of reality/people)	Strongly interventionist and collaborative; the phenomenon of interest does not remain static.	The phenomenon of interest does not remain static, but the rationality of artefact construction may impose a more static approach.
<b>Generation of Theory</b>	Results often context-based, but repeatable observations or 'patterns' may be observed. Some generalisation within or across research projects may be possible.	The resulting design may be context-based, but the objective is a transferable design or artefact. Generalisable (or at least reusable) artefacts are often a goal.
<b>Methods</b>	Qualitative. Methods ranging from positivist through to grounded theory can be adapted.	Qualitative. Design and development of software often taken as method, but can be managed as formal design research.

Table 20 Comparison between active research and design science methods (Papas et al., 2011:149)

They go on to discuss the variants of these research methods and recognise international differences in their interpretation, with European researchers seemingly less concerned with generalisation than their American counterparts. However, both approaches are seen to represent rigorous research methods within the context of interventions of the nature proposed in this research.

The use of an 'artefact' to effect change is considered key to design science, whereas in active research the observed result is the key and in this research it is the result of the intervention that is observed. Examples are also identified where sequential multi-methodological approaches lead into an active research stage in a research process, as was needed in this research (Papas et al., 2011:150).

In the teaching and learning literature, action research has a mature pedigree, as evidenced by the Educational Action Research Journal, first published in 1992 and dedicated to this field, and is seen to be the most effective way for academics to improve educational practice (Heinze, 2008:60).

As such, an active research method is not without precedent in either the information systems or teaching and learning literature and so the approach was adopted for the AR Phase of this research.

The term collaborative action research describes action research conducted in collaboration with stakeholders in the process. In the case of this study, the fellow tutors, administrators and the people mainly affected by the interventions – the students.

*'Collaborative action research is not only transformative but also emancipatory, as the exploration is based directly on the participants' understanding of their own actions and experience; it leads not only to new practical knowledge, but to the participants' new abilities to create knowledge and to make sense of their world and act effectively'*

[Yin and Buck \(2015:729\)](#)

Since a desired result of the teaching interaction may be seen to be in such sense-making of their learning interactions, achieving an improvement in their ability to learn how to learn, in the coursework project context emphasis was placed on participant reflection upon the process as much as on the project outcomes. In the classroom context, where the purpose of the interaction was the analysis of a problem-based learning scenario, issues of achieving both a learning interaction as a teacher, and a data source as a researcher, were important and touch on the ethical considerations discussed in section 4.3.5.2.2 below.

### **4.2.3. The degree of uncertainty**

The second factor within Trauth's (2001) framework is the degree of uncertainty which may only be gauged by reference to the available evidence from the same or similar contexts. The more evidence there is available, relevant to the given context, the more certain the perception of outcome might be – the more trodden the path, the clearer the route and destination.

Since this research seeks to discover factors relating to student engagement in the teaching and learning of EBD, literature relating to that context would be most

suitable. However, there appears to be little literature of this nature in relation to undergraduate studies in a British business school in China. It is therefore uncertain at the outset what will emerge beyond the practical experience and intuition of the researcher from teaching within this context.

While the insights gained from literature relating to other contexts might help to ensure that some important issues are not overlooked, or provide a set of provisional constructs to be investigated, it can only initially be of use, guiding, but not restricting, the researcher's interpretation and focus (Rowlands, 2005) and so, again, an interpretive approach may be seen as most appropriate.

Kaigler-Walker and Gilbert (2009) lament the lack of attention in recently published research to the design, and detailed explanation of the precautions taken in the design, of methods adopted in cross-cultural research. The expressed concern seems to be that, despite a significant body of research spanning over 30 years, the recommendations for avoiding the traps associated with cross-cultural and intercultural research appear to have been disregarded.

*"despite much explication and indeed, repetition of where the problems lie, many research papers taking a cross cultural perspective continue to be published in which serious doubts are raised about the legitimacy of the findings as a result of questionable assumptions or methods underlying the work"*

Stening and Zhang (2007:122)

Researchers have overlooked the fact that they carry with them their own cultural baggage and conditioning and may "unwittingly have failed to notice the varied cognitive frameworks of those they are studying" and have therefore addressed questions about behaviour *"through lenses that are inappropriate: for example, adopting a cause-effect, reductionist, positivistic perspective when a more holistic, integrative, relational perspective might make more sense"* (Stening and Zhang, 2007:126).

To avoid this ethnocentric trap when conducting research in China, it is suggested that non-Chinese researchers should first immerse themselves in Chinese culture (Stening and Zhang, 2007:127). The author of this research

initially visited China in 2004 as a tourist and has worked, studied with and taught students at the University of Nottingham, on their China campus, since November of that year. He has also consulted with international organisations in various Sino-foreign exchanges and, in 2009, married his Chinese partner. Thus, while remaining an outsider and learner, he may be seen to be relatively immersed and versed in Chinese culture and etiquette and continues to gain experience, working and living closely with Chinese people in China. The author has also studied mandarin, the official Chinese language, and although proficiency in a language cannot be mastered in a short time it is suggested that having a rudimentary understanding of the language may prove valuable in conducting such cross-cultural research (Stening and Zhang, 2007:127).

Because of the necessity to maintain construct validity, researchers of Chinese populations may have to either develop new means of measurement or investigate the possibility of using indigenous instruments. However, research instruments for management research that have been developed in China are scarce and so, while there may be difficulties associated with the development of cross-cultural scales, conducting most research in this context requires researchers to develop their own culturally sensitive and valid instruments (Stening and Zhang, 2007:130).

This line of argument leads to the conclusion that whatever methods are chosen, the researcher needs to be sensitive to the cultural origins of the approach, the culture under investigation and perhaps more importantly the researcher's own cultural baggage.

#### **4.2.4. The researcher's skills**

*'If you intend to embark upon a journey utilizing culturally responsive methods, consider yourself forewarned that you may end up in surprising and unexpected places. [...] It may be helpful for you (as it has been for me) to adopt an attitude of grounded theory which admonishes the researcher.'*

Bloomfield (2013:178)

An important factor in this research and within Trauth's (2001) framework is the skill of the researcher. At the beginning of this project, these skills were very much



in an early developmental stage, having completed only one previous research project at master's level and this with a mixed methodological approach with a strong quantitative element.

However, if this research process is successfully concluded as planned, the approach taken and the part-time nature of the study will ensure that the researcher, who is not skilled at the outset, will experience significant learning during this extended process. Indeed, as the project draws to a close, some seven years later, the researcher can reflect on the gaining of this experience, sufficient to be approached to deliver, and to be comfortable with, the teaching of these skills at postgraduate level.

#### **4.2.5. The researcher's theoretic lens**

The fourth factor in Trauth's (2001) framework is the researcher's theoretical lens. The emphasis in this research is on gaining an understanding of how different participant groups construct ways of knowing – approaches, if you will – to understand their situation and the ways they interact with their environment, each other and potential sources of information in developing and responding to decision-points in their group projects.

It therefore seems natural to take a constructionist perspective in conducting this research but, as discussed in section 3.2, this is perhaps simply as a reflection of the researcher's own epistemological (fundamental assumptions about the nature of knowledge) and ontological (the nature of the ways of studying phenomena) assumptions that the world and reality are not objective phenomena with known properties or dimensions but merely represent the perceptions and interpretations of people in the context of historical and social practices. Thus it is assumed that people, a category in which the researcher also find himself, socially and symbolically construct organisational realities (Berger and Luckmann (1990), Crotty (1998)).

Using the interpretive lens, the role of the researcher involves not only the gathering of data and observing and identifying emergent patterns, but the appreciation of different constructions and meanings that people put upon their experiences. The participants' understanding and perception of what is happening is that which is subjectively experienced - the aim of such a qualitative and interpretive approach, being to capture the perspective of the subjects: something which is seldom achieved (Denzin and Lincoln, 2011).

#### 4.2.6. Academic politics

The final factor in Trauth's (2001) framework is the influence of academic politics.

In the field of teaching and learning in the higher education environment, both concerns over quality and expressions of interest in the use of action research have been reported although there has recently been a resurgence of the application of such methods in the university environment (Gibbs et al., 2016). Thus from a political perspective, the choice of action research as a method would seem to require more justification and evidence to demonstrate good practice than might be expected for other approaches.

Heinze (2008) addresses these concerns over the alignment of action research and given research problem by presenting a tabulated appraisal for the application of action research in his work. This approach has been adapted in Table 21.

<b>ACTION RESEARCH IMPLICATIONS</b>	<b>IS THE NEED MET IN GIVEN RESEARCH SETTING?</b>
Need for improvement in practice	Yes. Improvement of engagement in small group interactions
Need for open mindedness in relation to data sources	Yes. Focus groups, observations, interviews will be used
Need for a plan of actions and iteration	Yes. Formalised planning procedures at the University for each iteration and publication of reflection, feedback and redesign proposals to previous and current participants.
Need for real-world research settings	Yes. The programme is situated in the University
Need for participant observation and collaborative reflection	Yes. The tutor as researcher, the students as assistants and participants enabling collaborative reflection.
Need for contribution to theory and practice	Yes. Need for theory contribution identified in literature.

Table 21 Needs alignment of action research to research problem

An action research approach would therefore seem to align to the research problem and was adopted for this research.

Qualitative research methodologies are surprisingly under-represented in IS research (Chan and Reich, 2007). Public discussion about the application of qualitative methods in information system research is fairly recent and the publication of qualitative research in the major US IS journals has also only recently become consistent (Trauth, 2001). Perhaps in recognition of the imbalance in research approaches taken in this field, journals that actively encourage qualitative approaches have been established (Trauth, 2001). Due to a perceived imbalance in methodological choices, there are several calls in the information systems literature for further qualitative approaches to be taken (Chan and Reich, 2007). This having been said, within IS research, a diverse range of methodologies that may be seen to fall within the qualitative research tradition have been applied including, ethnography (Suchman 1987; Wynn 1979, 1991; Zuboff 1988, Bentley et al. 1992), case studies (Trauth et al. 1983, 1991, Walsham 1993, Wastell 2001, Yin 1994, Benbasat et al. 1987), grounded theory (Urquhart (1997), Galal (2001), Kautz et al. (2004), Campbell (2005)), narrative analysis (Davidson, 1997), focus groups (Campbell, 2005) and interpretive practice (Komito, 1998).

In terms of teaching and learning, global pressures to measure and improve teaching standards are at a high, with regular reflection on national policy and national statistic comparison. In the Chinese context, the academic political landscape is shaped by central and local government policy who are able to strictly control funding for both research and education. International observers and the Chinese public would appear to be in disagreement over the success of Chinese education reform, the former painting a positive picture the latter, seemingly more negative (Ross et al., 2011).

Universities globally are embracing pedagogical techniques that encourage students to become more globalised in their perspectives, promoting an understanding of cultural characteristics and difference (Commander et al., 2015:1). These cultural differences extend to differences in teaching and learning

preferences both in terms of the student and the tutor. Some have argued that despite the pressures imposed by the institution on teachers to engage in cross-cultural teaching, these individuals are underprepared for the challenges of teaching within a different culture and call for better preparation of teachers for these interactions (Getty, 2011:352).

*[The Chinese college landscape] is now characterized by a more diverse student population, an increasingly explicit stratified hierarchy of higher education institutions, and a common perception that education is a private investment rather than a public good."*

Ross et al. (2011)

NUBS in China must also toe the line of UK university policy, to ensure standards are kept in line with both sister campuses of the University. However, one newly developing demonstration of the influence of success in this context is the recently approved funding by local government for the construction of a new facility on campus to house the business school - so we must be doing something right.

In some ways, the pressures from the three directions of teaching, research and administration - the three factors of academic job performance measurement - lead to choices in favour of efficiency in practice and it must be recognised that the focus of this research on the student body, while perhaps being a convenient and suitable choice for the novice researcher is, to some extent, also influenced by such pressures.

#### **4.2.7. Reflection on method selection process**

Based upon this analysis of the factors influencing choice of research method, as framed by Trauth (2001), an interpretive research tradition was selected to explore the questions posed in this research. These three questions focus on 'why' and 'how' issues and so a qualitative methodology was chosen to gain access to data and to inductively build theory.

This research may be seen as a single case study which, it is argued, would lack the generalizability of a multiple case-study approach (Dyer and Wilkins (1991), Eisenhart (1991)). This argument is weighed against the benefits - the richer

picture that might be enjoyed from investing those same resources in analysing a single case study, without the need to carry the associated baggage required to argue legitimacy in generalisation across and of multi-case approaches (Eisenhart, 1991).

As a study of a single case, the contribution of this research may only provide insight into the specific teaching and learning processes at NUBS in China and is therefore less concerned with the development of generalizable theory. Recognising the arguments made in evidence-based theory, this research is instead concerned with accurate product labelling, to provide context sensitive evidence in support of decision-making by others who, through such contextual definition would seem to be better informed to assess relevance to their own context, than those who would purport to argue such from another camp.

In summary, Table 22 below briefly lists the approaches and methods selected for application in each phase.

PHASE	RESEARCH APPROACH	MAIN DATA COLLECTION METHODS
<b>GI</b>	Grounded Interpretive Qualitative	Focus groups Questionnaires Maps
<b>SD</b>	Interpretive Qualitative	Focus groups Questionnaires Maps
<b>AR</b>	Experimental Interpretive Qualitative Action	Focus groups Coursework Online communities

Table 22 The research approaches and methods applied in each phase of this research

## 4.3. Selected methods

*"[Returning] Chinese scholars have a tendency to replicate Western studies in the Chinese context, but not realize the importance of infusing Chinese characteristics into their research designs."*

Davison et al. (2008)

### 4.3.1. Introduction

Having established the project objectives and with the aid of Trauth's (2001) framework, recognised the important considerations in selecting a suitable conveyance for getting there, the following section concludes the process by detailing the methods thus chosen.

The research project captured data from 133 participants in 19 separate sessions. Each focus group took approximately 3 hours to complete and the composition of each group was varied between all student, all tutors and mixed. Further details of participant selection for focus groups and of other sessions are provided in the methodology section. The timeline of these data collection sessions is represented in Table 23.

As described in the Introduction (1), this research was conducted in three phases, each phase addressing a different research question and the results of each phase informing the following phase.

The main data collection method applied in the first two phases was focus group discussions with additional data being captured from sources ranging from coursework, observation and online communities.

FOCUS GROUP	SESSION	PARTICIPANTS	DATE	PHASE
Questionnaire 1	1	5	16/03/2011	GI
No questionnaire	2	6	20/09/2011	GI
No questionnaire	3	6	20/09/2011	GI
NUBS in China tutors	4	~50	26/09/2011	GI
Questionnaire 2	5	5	28/09/2011	GI
Questionnaire 3	6	5	12/10/2011	GI
Analysis group	7	4	24/10/2011	GI
Analysis group	8	4	09/11/2011	GI
Questionnaire 4	9	3	04/04/2012	SD
Questionnaire 5	10	4	11/04/2012	SD
Questionnaire 6	11	5	16/05/2012	SD
No questionnaire	12	5	06/03/2013	AR
No questionnaire	13	5	06/04/2013	AR
No questionnaire	14	4	30/04/2013	AR
Questionnaire 7	15	5	19/03/2014	AR
Questionnaire 8	16	4	09/04/2014	AR
Questionnaire 9	17	4	30/04/2014	AR
No questionnaire	18	4	28/4/2015	AR
No questionnaire	19	5	27/4/2016	AR

Table 23 Focus group timeline

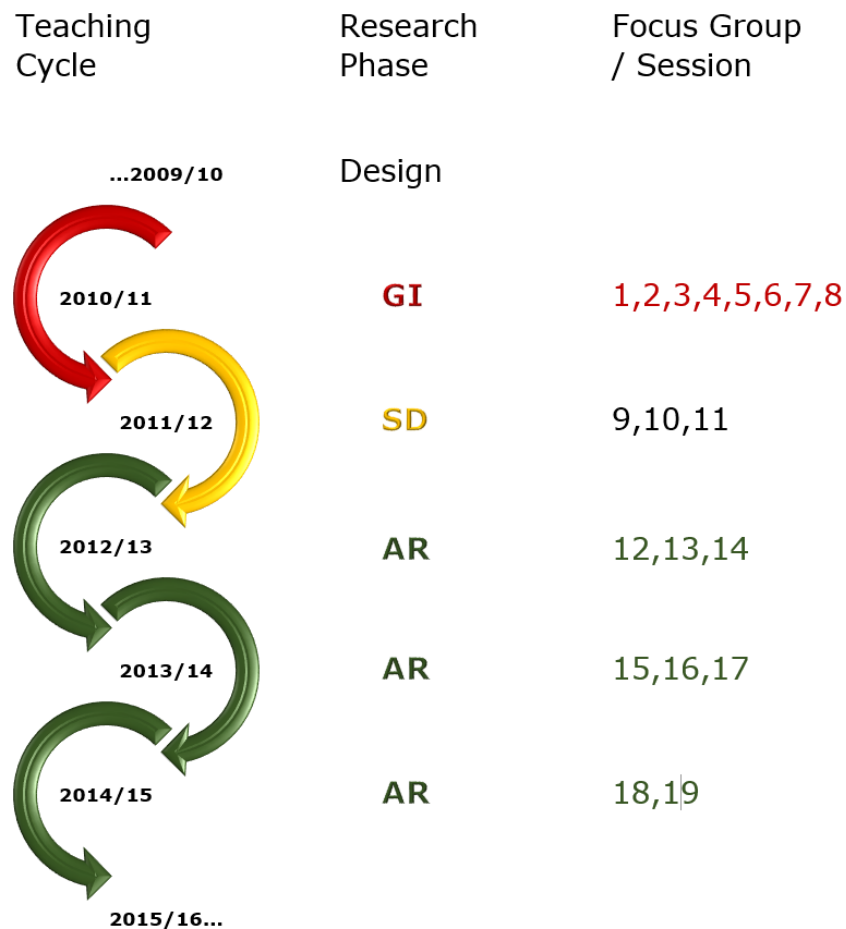


Figure 11 Relationship of teaching cycle to research phase and sessions

In the following table (Table 24), the activities in which volunteers participated in each phase are summarised. Not every participant engaged in each activity, these activities being changed or adapted as informed by previous iterations or as necessitated in the testing of different strategies.

PHASE	MAIN APPROACH	ACTIVITIES
<b>GI</b>	Focus group	Learning community discussion Factor identification and definition Factor ranking activity Factor causal mapping Factor influence discussion Factor analysing and consolidation
<b>SD</b>	Focus group	Factor analysing and discussion Mapping Strategy identification and definition Strategy analysis and consolidation
<b>AR</b>	Focus group Seminar discussion (Not assessed)	Each seminar with a different focus on IS strategic alignment process: Mapping Focus group design User interfaces and information needs Presentation
	Group project (Assessed)	Evidence-based research project Focus group Online community sharing and discussion

Table 24 Participant activities in each phase

As detailed in the analysis chapter, the method applied to the analysis of the data emerging from the different sources, from the questionnaire responses to the audio and video recordings of the sessions, was the constant comparison method - an approach tailored to producing inductive theory comprising of three stages of analysis, open coding, axial coding and selective coding (Pivec (2006), Gibbs (2002), Strauss and Corbin (1998)) with the aid of the qualitative analysis software instrument, Nvivo (See section 5.2).

Many sources of data were collected. In the following sections, the process model, technologies employed and the tools that were developed and used for data



capture are discussed. In this discussion, the importance of the cultural insider, and how this aspect of the research design and process was addressed, is emphasised.

#### **4.3.2. Process Model**

*"Changes implemented [...] change the problem situation as originally perceived, and in the new situation the cycle of learning stimulated by the methodology can begin again... [sic] It is in principle never ending, and ending a systems study is an arbitrary act."*

Baskerville and Wood-Harper (1998)

The process model of this research, is essentially iterative, although the description of the process may seem linear. The research project is split into three phases, each designed to address one of the three main research questions. The resulting structure is represented in Figure 12, showing the linkages between research questions and phases of the research and the flow of both data and analysed themes between phases, the analysis of themes and strategies identified one phase informing the next.

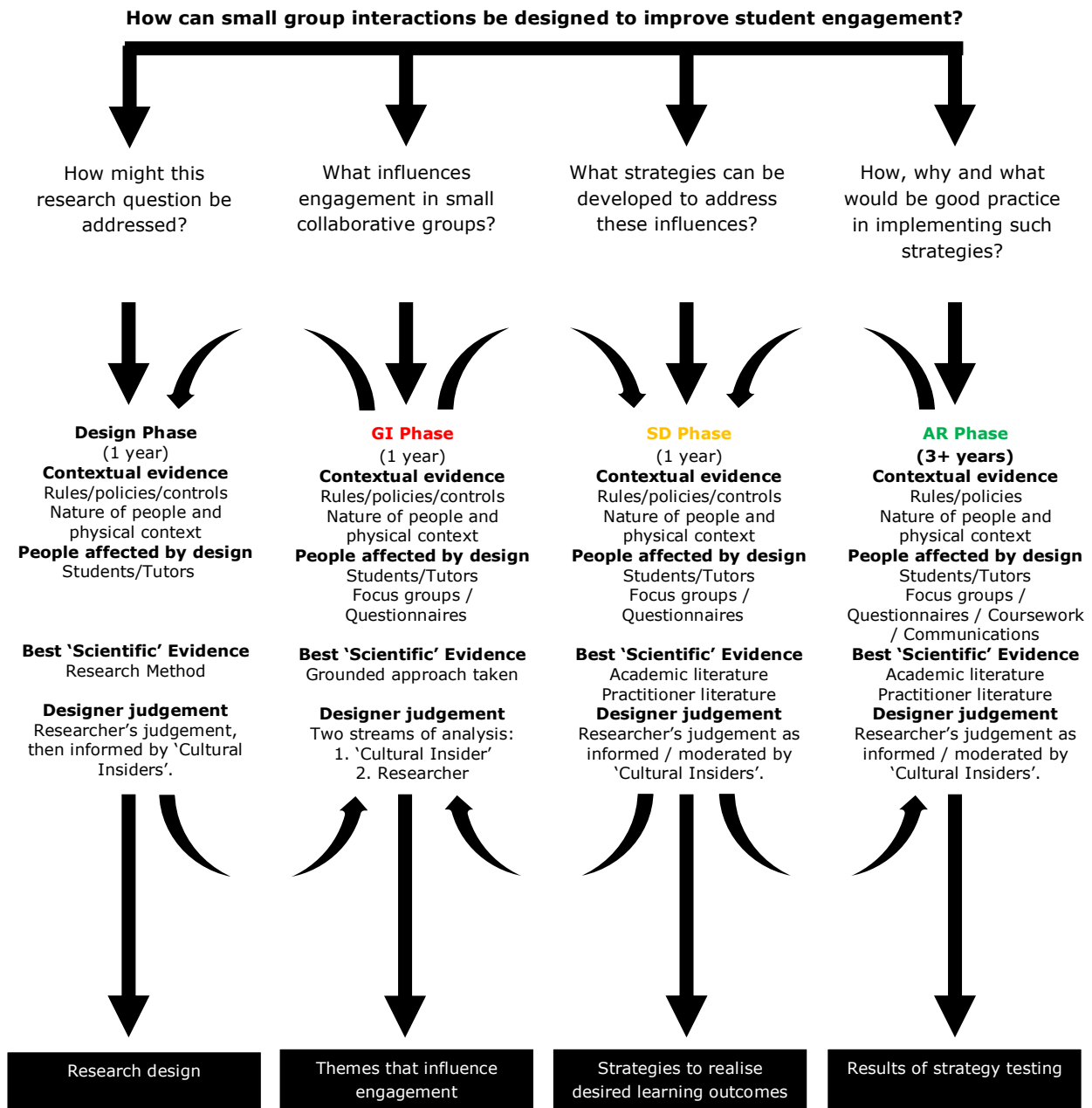


Figure 12 Research process map

One of the main methods adopted for collecting data in these research phases was focus groups, the nature of which are also cyclic, as demonstrated in Figure 13. This also shows the separation between the roles played by the researcher in the process, as collaborator and as facilitator.

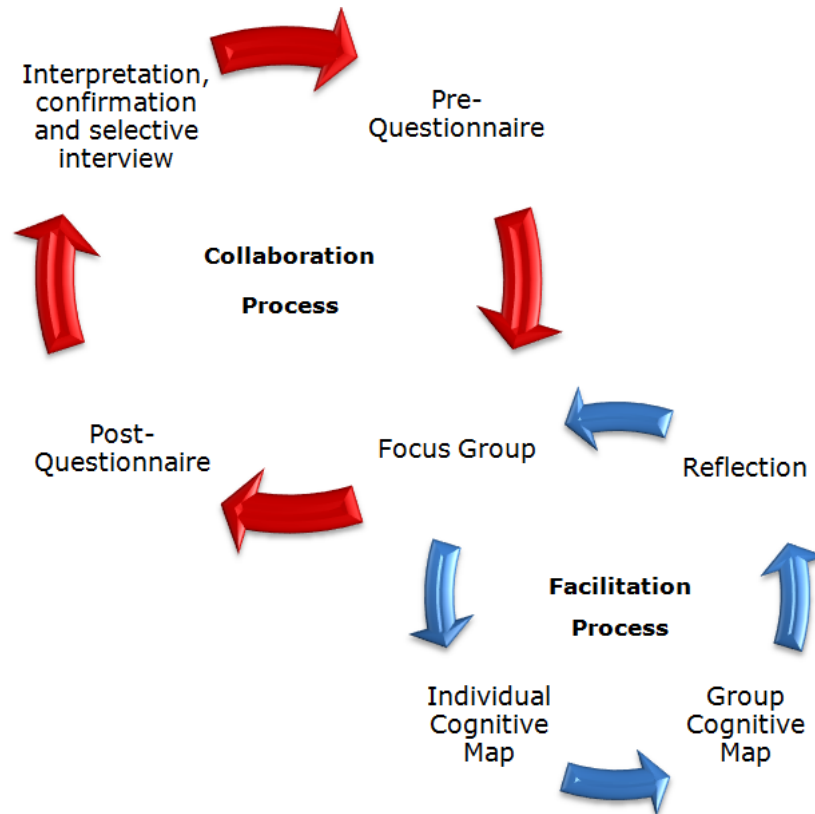


Figure 13 Cyclic nature of focus group research showing the collaborative and facilitative roles

As with Avison and Wood-Harper's Multiview, the researcher may be seen to play multiple roles, assuming a collaborative role, essentially becoming a "would-be improver" during the research process, remaining a social and political outsider save to the extent that the interaction is altered by the intervention (Baskerville and Wood-Harper, 1998:98).

Thus while the process of the research may be steered by the researcher in collaboration with the participants (Collaboration, the role of facilitator is adopted to minimise the influence of the researcher over the modelling and discussion outcomes in the creation, analysis, interpretation and implementation phases (Facilitation Process).

The pedigree of such iterative action research is linked to that of both Checkland's systems thinking and Pedler's action learning (Baskerville and Wood-Harper, 1998) so, while considering the nature of the research approach, parallels with the cyclic teaching approach should also be recognised. Achieving learning through action research (ALTAR) was explored in non-academic settings (Shah et al., 2007), but the relationship to teaching and learning contexts, where students are engaged as researchers into their own behaviour and contexts, seems clear.

The iterative nature of this approach enables changes to be made to a variety of factors in the Facilitation Process during each cycle, the outcomes of which are the main focus of the AR Phase of this study. However, a downside to the iterative nature of this type of focus group research is the reduction in creativity that repetitive interactions between the same group members may produce (Skilton and Dooley, 2010:118). It is suggested that such stagnation may be mitigated by process interventions or by outsider entry into the group (Skilton and Dooley, 2010:118). In this research, each iteration of the research process is designed to be different.

The inclusion of a Chinese research assistant in all stages of the research development is recommended by Stening and Zhang (2007) to ensure that no fundamental errors are made. Initial pilots were conducted with a fellow PhD student who was not only of Chinese origin, but was also a Chinese university teacher, with considerable experience of interactions in small groups within the Chinese context. For these early iterations, a Chinese master's student also assisted in the preparations for and observation of research sessions.

In successive iterations, UG student volunteers and tutor volunteers supported the development of the research along with the analysis and presentation of research findings at internal conference. Thus the research project and its design was informed by cultural insiders throughout.

#### 4.3.3. Cognitive maps

Used both in academic research and by practitioners, there are many different methods that have been used to map human understanding of their perceived reality or mental models.

A wide variety of mapping techniques were presented to the student participants of this research in the accounting information systems module in which they were engaged. This meant that each student participant had a range of mapping approaches to draw upon in presenting to each other their mental models of the systems and processes being discussed. As such these maps became a tool of choice by participants in the early stages of the research and this became a natural progression in designing subsequent iterations of the focus group interactions.

Mental models may be defined as *'deeply ingrained assumption, generalisations, or even pictures and images that influence how we understand the world and how we take action'* (Hoover, 2008).

Maps can be used for documenting a system, knowledge generation, knowledge sharing or domain changing. Domain changing mapping processes or 'active' mapping processes cause changes either directly or indirectly to the domains that they map (Romney and Steinbart (2012), Krogstie et al. (2006)).

As noted by Sterman (2000), causal-loop diagrams (CLDs) are particularly good for quickly capturing hypotheses about the causes of dynamics, eliciting and capturing the mental models of individuals or teams and communicating the important feedback loops that are believed to be responsible for a problem.

CLDs have been used in system research, particularly system dynamics research for some time as an exploratory tool for complex, or messy, problems (Sterman, 2000). In Campbell's (2005) research, they were used to illustrate the various relationships between the intellectual and social dimensions of alignment as understood by the participants.

Cognitive maps, following pre-mapping interviews to develop concepts, were used in the research of Hines (2000) by presenting these pre-defined concepts to the interviewees and asking them to rearrange them to demonstrate cause and effect.

In this research, different types of maps were used by individuals and groups of participants in focus group interactions to identify and relate themes relevant to the research questions.

#### **4.3.3.1. Map Interpretation**

Each mapping method follows a different convention and thus no general approach can be taken to their analysis (Eden et al., 1992:309). Most approaches to map analysis have been based upon methods developed from the demands of 'content analysis' while others reflect 'personal construct theory' (Eden et al., 1992:309).

The use of focus groups and cognitive mapping may open up questions over acceptable levels of influence that the researcher may have on the respondents and the reliability and validity of data gathered (Clarkson, 2008).

At some point in the research process, be it by direct or indirect elicitation method, interpretation will need to take place either in comparing or in interpretation of cognitive maps. Thus the question arises as to whether or not the researcher should impose a specific method of mapping on the respondent, or should the respondent choose their preferred method of mapping.

Complications may arise as a result of freeing the respondent to choose their own method, yet in a focus group setting, the differing methods may evoke additional discourse between participants, as their understandings and knowledge is externalised and exchanged. Alternatively they may cause rifts to develop between the differing perspectives or pre-existing mapping technique knowledge between the respondents.

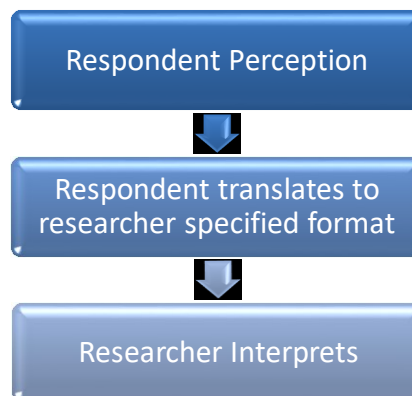


Figure 14 Modelling method dictated by researcher

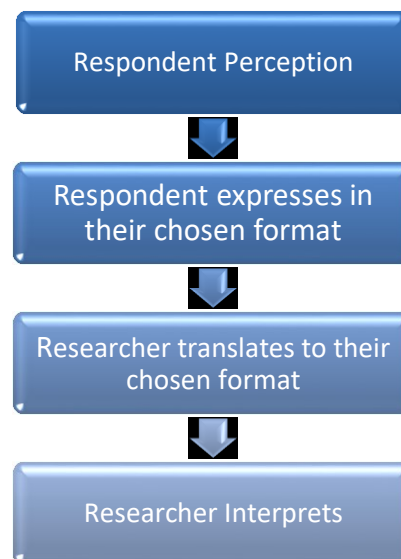


Figure 15 Modelling method dictated by respondent

One virtue of the researcher stipulating the format for the mapping process would be that the respondent controls the influence of the researcher by removing the need to translate their response, but the researcher has already influenced the research outcome by stipulating the format. In addition, the respondent's ability to use the given coding method will influence the data captured.

An advantage of the respondent using their own coding method is that the information is expressed and captured at an earlier stage, enabling the researcher to justify and document their translation and interpretation. The disadvantage is that a translation phase is needed before interpretation is possible. However, if the process involves a feedback phase, then the accuracy of this translation can be verified with the respondent. It may therefore be better for the mapping methods to be decided by the respondent, rather than a common method applied and perhaps taught to respondents. Therefore in this research, the respondent is asked to code their meanings in their own chosen format, both in language and in the maps that they create.

In their revised framework for process models representing knowledge for action (Figure 16), based upon and extending from the SEQUAL model quality frameworks, highlights the activities (Oval shapes) involved in the modelling process are emphasised, as is their impact on the perceptions and realities of participants in the domain.

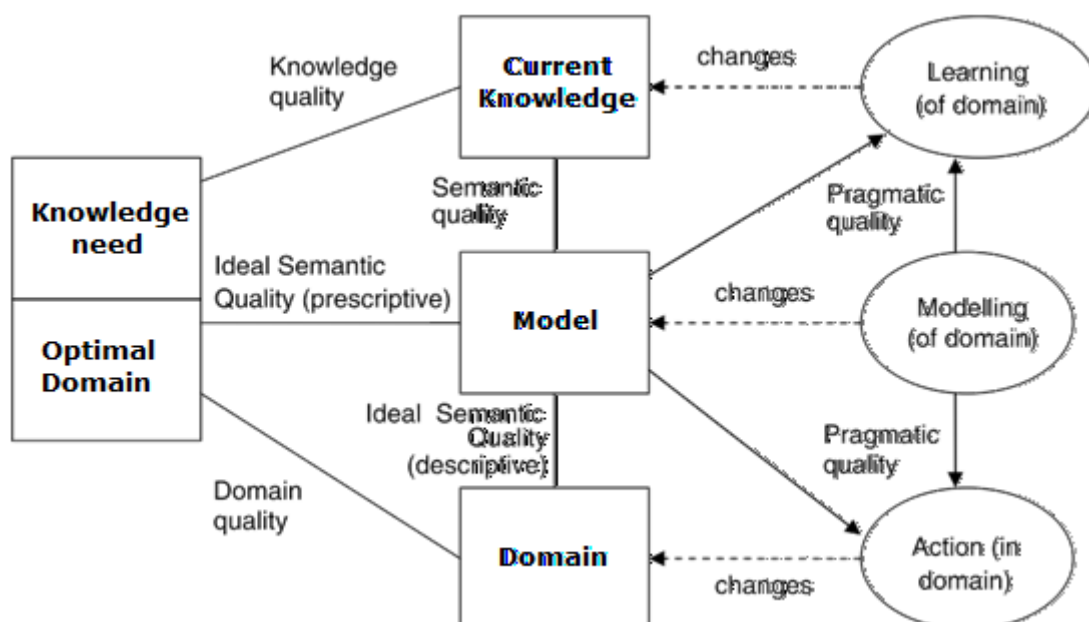


Figure 16 Process model framework representing knowledge for action (Krogstie et al., 2006:98)

This model may be seen not only to relate to the mapping process in the focus group tasks being investigated in this study, but also the study itself.



The soft systems approach reflects a similar view on the modelling of a domain, but recognises the impact of people on the process under investigation and on the process of modelling it.

Checkland and Scholes' (1990) Soft systems methodology is characterised by a well-defined structure consisting of a two-stream, iterative process model, divided between a logic-based stream and a cultural analysis stream (Figure 17). The logic stream consists of the comparison between relevant systems, models and the situation; determination of changes; and action to improve the situation. The cultural analysis consists of analysis of the intervention, the social system and the political system. The determination of changes is dependent on systematic and cultural feasibility, and this stage interacts with the cultural analysis.

Derived from systems theory, a soft systems methodology attempts to view a phenomenon holistically rather than by reducing it into smaller components for study, thus it is argued to be a shift in paradigm – from optimisation to learning, from prescription to insight and from reductionism to 'holism' (Checkland (1981), Checkland and Scholes (1990:15)). Its systemic or holistic approach, makes it an appropriate approach for this study which deals with complex human interactions since it can explicitly evoke and reconcile the differing perspectives of participants.

The five core concepts of the system thinking framework are as follows (Checkland and Scholes, 1990).

1. The idea of a whole entity with possible emergent properties;
2. The derivation of abstract wholes for comparison against the perceived real world situation;
3. The process of inquiry as a 'human activity system' – a set of activities so connected as to make a purposeful whole;
4. Seven stages in the inquiry process encompassing these activities: recognizing a problem, expressing a problem, defining a problem in the context of 'human activity system', creating system models, comparing models to the real world, debating about changes, and taking actions to improve;

5. Iteration as a part of the learning process when examining real-world situations through human activity.

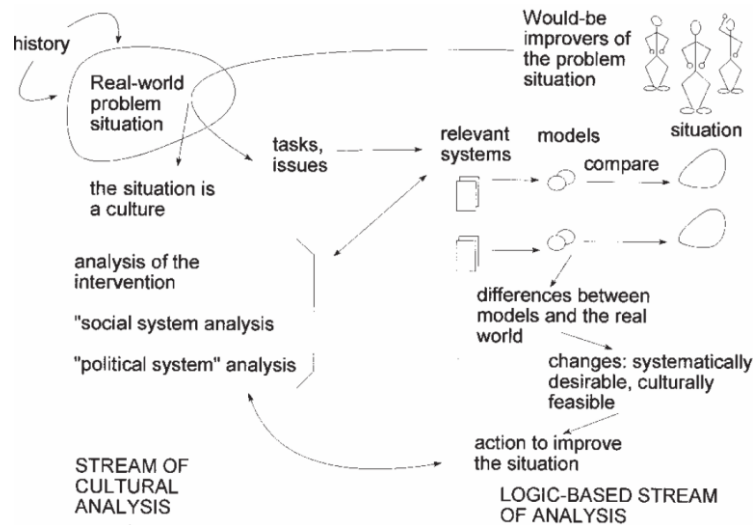


Figure 17 Contemporary soft systems methodology (Checkland and Scholes, 1990)

The epistemological premise for comparing systems models with Reality, may be seen to be flawed since it seems, on the one hand, to take a constructivist stance while, on the other, taking a realist view, when comparing models to “the real world” or the “situation”. This would be unacceptable in research where the pragmatic pluralist viewpoint is being taken (Watson, 1997). To resolve this apparent rift, in this research, the methodology has been altered to provide a consistent approach in philosophical assumption. Figure 18 shows this revised methodology.

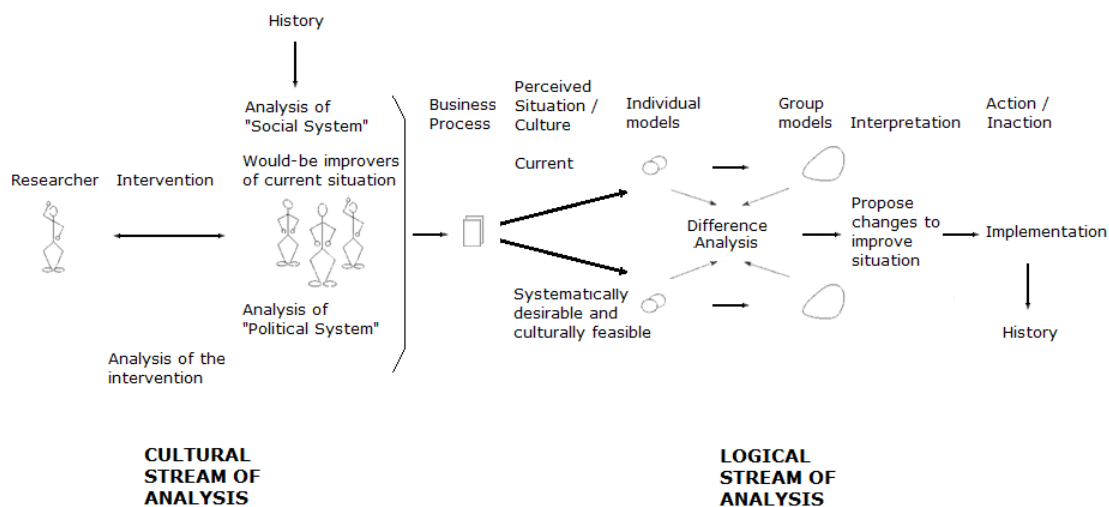


Figure 18 First adaptation from Contemporary soft systems methodology

[SSM works best] *"not as a prescription to be followed, but as an explicit framework of guidance for sense making, leading to processes which can be both described and recovered"*

Checkland and Holwell (1998:169)

This adaptation still recognises that human activities are systematic, and that action researchers are intervening in social systems, however there is also recognition that, as argued in the previous chapters, reality models of the individuals and the group are based upon perceptions of a Reality rather than representing Reality itself. Thus the comparisons that are made are between the models generated by individuals and those constructed in a focus group setting where the social and political systems of the group culture have influence over the model.

Furthermore, the analysis and interpretation of the models is conducted in a group, rather than an individual setting, meaning that the cultural and political influences, identified in the cultural analysis, impact on these two stages of the process – as they might be expected to in the organisational context.

However, as also referred to in section 2.2.3 above, Watkins-Mathys (2007: 209) suggested that the ability to capture the cultural stream is limited unless cultural insiders and resources are employed. Thus a further adaptation is needed to this model, as illustrated in Figure 19 below, to cater to this argument.

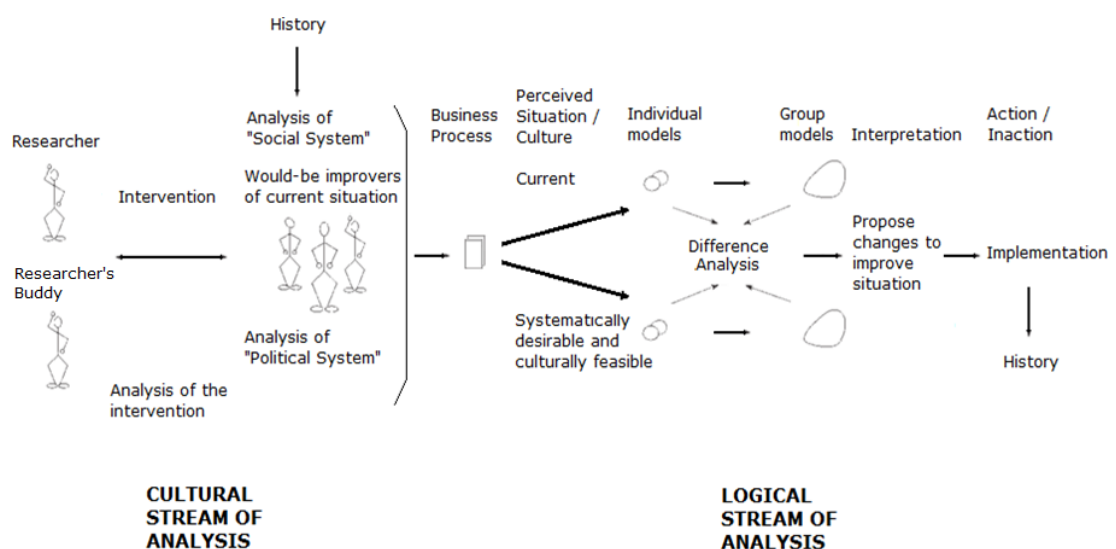


Figure 19 Second Adaptation

This second adaptation shows how the intervention by the research team along with the social and political systems within the organisation, comprising the Cultural Stream of analysis, impact upon the analysis of the logical stream which is the main data source of this research. Thus better understanding of the cultural stream enables better manipulation and understanding of the test conditions in the Logical stream of analysis.

This revised model and its cyclic nature seems to sit well with the process model of the focus group (Figure 12) and the overall process model of this research (Figure 13).

#### 4.3.4. Focus groups

In this research, the term 'focus group' is used to signify the bringing together of a group of people to participate in a discussion of an area of interest (Boddy, 2005:251).

Hines (2000) draws from the literature to weigh the general advantages and disadvantages of choosing focus groups as a research method (Table 25), although the appropriateness of such a choice must be seen as contextually sensitive (Kaigler-Walker and Gilbert, 2009).

ADVANTAGES	DISADVANTAGES
Relatively inexpensive to conduct research	Dependent on the skills of the interviewer
Data-rich	Can deteriorate into an unfocused group with poor interviewer, poor planning or dominance of strong individuals
Flexible	It may be difficult to research sensitive issues in group
Stimulating to respondents	Group think may mislead individuals in the group and the researcher
Aids recall	Access to appropriate people denied in an organisational setting, e.g. on holiday, off sick, too busy, away on business
Allows accumulation of responses from all participants	
It is possible to ask open-ended questions allowing the experience of participants to emerge	
Useful in phenomenological research because emergent themes can be pursued with the group to shape experiences	

Table 25 Advantages and disadvantages of focus group research - Hines (2000))

Focus groups are seen as especially appropriate for use with Chinese participants because of their strong "Confucian, Taoist, and Buddhist philosophy within Chinese culture which affects individual behaviour. The influence is seen in the individual's respectful attitude towards hierarchy and norms of the collective." (Bond (1988) and Watkins-Mathys (2007:211)).

It was suggested by Kaigler-Walker and Gilbert (2009) that focus groups be used to alleviate language issues in developing quantitative surveys for use in a Chinese population. The use of language in focus groups in China was also explored by Watkins-Mathys (2007:209) who determined that "shared meaning can be constructed in focus groups across different languages and locations", although the ability to do so is seen as limited unless cultural insiders and resources are employed.

Focus group participation can support emancipation of all individuals involved in the research, each bringing their own experiential insights which may change as they learn of the experiences and insights of other participants (Stahl et al., 2011:379). Such interactions involve the collaboration of people bringing with them a blend of different backgrounds, behavioural patterns, awareness and tacit knowledge (Mohamed et al. (2004:131), Armstrong and Mahmud (2008)). Thus the focus group method can enhance a participant's reflections and build on these conceptual insights via other participants' perspectives so that a 'collective sense is made, meanings negotiated, and identities elaborated through the processes of social interaction between people' (Stahl et al., 2011).

Most qualitative research conducted in China has typically been undertaken by western researchers, or Chinese researchers using western methods, without adaptation to what is sometimes a profound difference in psychology of those under investigation (Eckhardt, 2004:3). This was also picked up by Watkins-Mathys (2007:218) in her research in China, focussed on language differences and outsider

influence in focus groups. One interesting finding was that participants in focus groups conducted in a second language seemed less inhibited in their interaction.

Additionally, involving the focus group members in the interpretation and sense making phase of the research is seen to be vital and adopting Watkins-Mathys's (2007:221) three stage guide to focus group study in China and using an iterative approach was seen as important, enabling the focus group members to participate in, review and alter the outcome of the interpretation process.

Focus groups, in various forms, were used throughout the study, in the initial LCF sub-committee, the GI and SD phases, by students in conducting research into the coursework problem and in follow-up discussions about the module.

#### **4.3.4.1. Respondent selection**

Each stage of the research drew upon respondents from groups with different demographic - each bearing certain known characteristics. In the following two sections the similarities and basic differences between the members of each group are highlighted.

Initially, 3<sup>rd</sup> year student volunteers were requested by announcement following third year accounting information systems lectures. The volunteers that responded were all then from the same age group, with a similar level of education and understanding of processes and systems.

Subsequent volunteer groups were drawn from different years of the UNNC student body until, in later groups, teachers and a cross-section of students and teachers were selected to introduce different hierarchical influences.

Records were maintained to ensure that no individual participated twice in the research, although focus group participants were invited to volunteer as observers for subsequent iterations.

#### **4.3.4.2. Group size**

In the early stages of the research, group size was seen to be an influencing factor in collaboration as were the hierarchical considerations identified in the literature. This view is supported by Gilbert (2008:235) where the phenomenon 'social floating' or 'free-riding' is identified in cases where the group size becomes too large (over about 8 members) and respondents do not feel the need to contribute to the conversation. Following this argument, group size was controlled in each phase of the research, using project group sizes between 4 and 7 participants. In addition and bearing in mind the inexperience of the researcher in conducting focus groups in the early stages, smaller manageable numbers were seen as more appropriate. Respondents were also asked for their opinion on the influence of group size on the interaction and most indicated that 4 to 6 was appropriate for this context.

#### **4.3.5. Questionnaires**

##### **4.3.5.1. Introduction**

Each participant involved in focus groups conducted during the first two phases of the study was assigned an Individual research pack with a unique Pack ID and each group, a Group research pack, again with a unique ID. For the study, all respondents had an English level of IELTS 6.5 or higher and were therefore deemed competent to carry out the research process in English. Therefore the pilot study Research packs were provided in English.

In this section the contents of those packs, the data collection process and the initial design of the research instrument are detailed. A sample of each of these research packs may be found in Appendix G and H.

#### **4.3.5.2. Individual research pack**

The individual research pack is split into two parts: the pre-session and post-session questionnaires.

##### **4.3.5.2.1. Cover sheet**

The cover sheet of the pack included the title of the research, the unique pack identifier, the version number of the pack, the name and contact information for the researcher and the name, address and logo of the Business School.

##### **4.3.5.2.2. Ethical considerations**

While collective data might subsequently be shared, confidentiality of an individual's questionnaire responses was guaranteed in a letter provided to the respondents in their research pack, both for ethical considerations and to provide an environment where respondents would feel more comfortable in expressing views that might go against accepted practice.

As with all research conducted at the University of Nottingham, this declaration of research ethics, conforming to the revised ethical guidelines for education research (BERA 2004), was completed and appropriate declarations made during each stage of the interaction with respondents.

In addition to this letter, it was found reassuring in the initial stages of each research group, to assist in the generation of trust between respondents, for the researcher to intervene and emphasise the confidential nature of the conversations being held. This intervention was scripted and covered the importance of participants not divulging the content of conversations and activities held during the research process. On several occasions, this intervention produced noticeable signs of relaxation on the part of respondents – particularly where a mix of stakeholder type (tutor / student) were present. Another point of note was the direction of conversation following this intervention where respondent were looking



for confirmation from their group members that this confidentiality was accepted by all. Finally, on one occasion, the researcher's presence as a tutor, was also recognised by a respondent and that this confirmation of confidentiality was welcome.

Yet confidentiality is a two edged sword since, if an individual knows that they will not be identifiable and hence accountable, the opportunity to respond to questions in an irresponsible way is open. This was recognised by one respondent in FG06 when another became particularly assertive on a point, with an apparently 'performative' (Ågerfalk, 2010) agenda.

In the research of Kaigler-Walker and Gilbert (2009), an issue arose concerning the standard consent form used by the researcher's university to ensure ethical conduct. The Chinese research colleague suggested that the form was inappropriate since participants were required to sign the form before it was collected and kept by the researcher. As an acceptable alternative it was suggested that the researchers develop a letter that guaranteed confidentiality that the participants could keep thus providing an assurance of anonymity but without the requisite signature.

At the request of the ethics committee, the packs included two copies of a letter of introduction to the respondents, explaining the research and assuring their anonymity within the constraints of the research process. One copy of this letter was for the respondent to retain and the other was for the researcher. Unlike Kaigler-Walker and Gilbert's experience (2009), no issues were encountered with this approach.

#### **4.3.5.2.3. Questionnaire design**

To improve validity, where possible, questions used in the questionnaires were drawn from previous research. Four question types were included, as follows:

1. Simple questions to which the response was a word, date, number or short phrase. Such questions were mainly drawn from Dyba (2000).
2. Questions looking to evoke a response depending upon range of agreement or disagreement with a statement. A Likert-type scale was used to capture this sort of response and, as suggested by Dyba (2000), a 5 point scale was used in preference to a 3 or 7 point scale to improve reliability. Most questions of this type were adapted from Gutierrez et al. (2009).
3. Ranking questions, where respondents were asked to place items in a specific order in accordance with their evaluation were asked.
4. Open ended questions were used to evoke more in-depth responses. Some of these questions are from some from Chan (2011), some from Campbell (2005) and some are original questions arising from this research.

#### **4.3.5.2.4. Pre-Session questionnaire**

The pre-session questionnaire contained 6 sections:

1. Personal demographic
2. Organisation demographic (Dropped after the pilot)
3. Alignment / communication
4. Communication
5. Systems review
6. In the GI and SD phases, mapping was requested:
  - a. Showing how this process works now and
  - b. Adjusting the map to show how it could/should work better

After completion of the pre-session research pack, refreshments were offered while the participants engaged in an ice-breaking exercise and researcher reviews the pre-session responses to look for factors important to the following stages. In some iterations of the research, the researcher explained a mapping technique, in some the respondents will be allowed to decide how to map the systems themselves and in others, no mapping was to take place, so the following task was explained. The research then moved to the next phase.

#### **4.3.5.2.5. Post-Session Questionnaire**

Following the group tasks, respondents turned to the last section of the research pack and answer the following 3 question sections:

1. Questions relating to the central theme of the focus group
2. Questions about the group collaboration during the research project
3. Questions about the research process and any areas for improvement

#### **4.3.5.3. Group research pack**

When the participants were brought together, the researcher introduced them to each other and to the research project. Depending on the nature of the tasks to be completed, the researcher introduced some technology or concepts to the group, before engaging them in the tasks by providing them with the group research pack.

The following sections explain the different types of tasks and information contained in the group research packs – each group pack varying depending on the iteration. Common feedback from early focus groups reflected the need to establish trust and generate a relaxed environment, before open communication could develop. Several approaches were tried but the most efficient approach seemed to be for the respondents to each speak for 60 seconds about their favourite topic, or themselves. Due to the initial effectiveness of this approach to breaking the ice in focus groups, this approach was adopted for most initial interactions, although feedback led to ongoing changes in each iteration.

The group research pack then explained the task that the group should attempt to complete. In the early stages, to avoid interfering with the group dynamic, the group were left to interpret the pack. In subsequent iterations, the researcher explained what was being asked of the group. Sometimes these activities were related to maps, the group comparing their individual maps and then working together to create an agreed map of the process under investigation. The first map was of the process today and the second, to represent a redesign of

the process that would be socially and culturally compatible (Checkland and Scholes, 1990). To speed this process, following the suggestion from two groups, after capturing the output from the first stage, the map was captured and, using a different colour pen, the changes were added to the original map.

#### **4.3.6. Interview**

Following the research sessions, selected brief interviews, to gain better understanding of any anomaly or uncertainty, were conducted. Generally the purpose of these interviews was to understand or confirm what had been said but, through explanations, greater detail tended to emerge. This might have been due to several reasons such as freedom from the group dynamic enabling an individual to express themselves more openly, or from a renewed energy since focus group sessions tended to last for 2 hours or more.

While these additional interactions proved useful as a means to look further into the underlying reasons and validate the outcomes of the preceding iterations of the focus group and questionnaire process (Kvale, 1996), it must be recognised that interviewees are active individuals that have their own agenda and motivations and that they may use the interview interaction simply to make their own points in a 'theatrical' performance that may in itself be misleading. Thus, as with the individual questionnaires, their representation of Reality to the interviewer may not match their own perception of Reality, but instead be purposefully misaligned to suit that agenda.

Interviews tended to last for about 5 minutes or less, since they were conducted shortly after the focus group interaction to which they related and the ideas were fresh in each other's minds and the corrections/inputs were then incorporated by amending or adding notes to the participants' questionnaires.

#### **4.3.7. Coursework**

Drawing from Yandell and Giordano (2009) it became clear that the problem set in the coursework needed to be authentic and engaging, in order to better motivate students to work together toward its solution.

Taking on board the arguments developed by both Wastell (2011) and Starkey and Tempest (2009) about the nature of case studies, it was decided to focus both on management and user issues in construction of the scenario. Furthermore, to provide a context with which the students were already familiar while ensuring that the desired learning outcomes of the module, in which students were engaged, were addressed.

The problem also needed to allow multiple views and methods of inquiry, and establish clear student roles in the process that would enable the coursework to be completed (Yandell and Giordano, 2009). To enable comparisons of different approaches to the problem-based coursework to be made, different methods for process analysis were assigned to different groups of students in separate learning communities.

For the accounting information systems module, the module used to carry out the final phase of the study, 172, 216 and 188 students were enrolled in 2012/13, 2013/14 and 2014/15 respectively. These students were allocated by administrators into 9 to 10 classes. In the 2012/13 iteration, students in each of these classes were then assigned to the soft-systems, User-centred or evidence-based approach communities using the RAND function in MS Excel.

During their project, the students were responsible for conducting focus groups to gain an understanding of the processes, within which the coursework problem had been set, using their assigned approach. In the final weeks of the module, focus groups were then conducted in a classroom setting, where differences arising from taking these different approaches were discussed and reflected upon. Outcomes of these final focus groups interactions were included, along with those

of other student focus groups, in the form of tangible outputs and observations, in the appendices of the coursework submitted.

The tool developed, and the problem presented to students in 2012/13, was a problem-based strategic alignment project, set in the students' own context, where students were required to account for their activities for a period of time, using an accounting information system, including a prototype MS Access database, of their own design.

The design of this problem-based coursework, as altered from the case-study coursework previously employed, was developed by taking into consideration the problems identified in the literature, practice and student feedback and to embrace the potential of those ideas and approaches that have been found to achieve better learning outcomes.

The perspective of the people affected by this change to the module – the students – is captured by analysing the reflection on process within the coursework, the feedback provided in Student Evaluations of Teaching (SET), Student Evaluations of Module (SEM), Moodle feedback and advice forums and follow-up focus groups. SETs and SEMs are the feedback documents routinely collected at the University that are used for feedback and performance review, whereas the other sources of data are derived from interactions designed for this research, or as part of the teaching interaction.

#### **4.3.8. Evaluation**

Measurement of a phenomenon, also referred to in the literature as evaluation (Klecun and Cornford, 2005), enables comparison either with another context or change over time and was needed to assess the outcomes of this study.

Within active research the evaluation of each cycle contains both the evaluation of the iteration by stakeholders and evaluation of the outcomes of the intervention, in this case the design of the iteration, by the researcher (Papadopoulos et al., 2011). As

recommended by Fredricks and Mccolskey (2012), measurement using multiple sources was seen as important.

Perhaps the best form of measurement in terms of learning outcomes from these interactions would have revolved around the extent to which this learning was applied in practice. This would involve a follow-up study to see how these same students were applying their learning to decision-making and design in practice. However, this was not possible within the scope of this research.

Due to their role as tutor, the researcher was able to determine the nature of communications arising from the students engaged in the learning interactions, on bulletin-boards, by email or in face-to-face meetings. These communications were recorded and the content categorised into two types. Discussions about the desired learning outcomes (LO) – the focus of the project, and those relating to decision-making (DM). Where a communication contained both categories, the communication was coded for both. Using this simple measure it would be possible to see not only what aspects of the project were absorbing student attention and resources, but also provide an insight into student decision-making ability, confidence and tutor dependence – three themes emerging from the first phase of this study - while providing a measure for comparison between iterations of the teaching and learning process.

The question of how to promote, measure and reward scholarly achievement is one that continues to plague academic institutions and there would appear to be no generally accepted approach (Doh, 2009). The learning outcome / decision-making approach that was considered 'best' in this project looks at the way students communicate about the problems they have discovered in solving the problems set. It is not a direct measure of student perception of and reflection upon the utility of the approaches they have learned and applied to solve the problem-based activity, but rather an experimental measure of action.

There are several approaches to the assessment of contributions made to online communities for academic purposes. Drawing on the work of Davie (1989) and Paulsen (1995), Anderson (2004) discusses approaches to the assessment of such contributions and the approaches to explaining the objectives of the exercise to students in higher education. In this project, the coursework was designed to require reflection on contributions made to these communities, so that a further stream of measurement, through online assessment, became available.

From the researcher's perspective, the major challenges, as discovered during the implementation of this strategy, were found to be:

1. Technological issues in configuring an appropriate interface for this implementation,
2. Maintaining a balance between student-student trust and teacher-student dependence, and
3. Conveying this change in expectation as the learning mode changed from a teacher-student model, towards one of collaborative learning.
4. Measuring the value of the high volume of contributions to these communities.

The measurement of the value of contributions to the communities was devised and agreed with students engaged in the projects prior to the project. These two scales were for quality – the marking criteria used as standard at NUBS in China (See Appendix L), and for the timing of the contribution:

Not included in the data analysed for this thesis, but included in the following iteration of this ongoing T&L cycle, assessment through peer review was included in the measurement of contributions to the bulletin-board interactions. Implementation of such technologies to support peer review have been found to be effective (Brutus and Donia, 2010).

As lamented by (Rolheiser and Ross, ND) the changing role of teachers and the changing educational environment pose some of the greatest challenges in providing appropriate forms of assessment, from formal objectivist testing to



alternative constructivist approaches and the dangers of a shift towards self-assessment, without guidance or appropriate feedback, may easily be inferred when viewing Rolheiser and Ross's (ND) flow diagram, showing the cycle of the contribution of self-evaluation to learning.

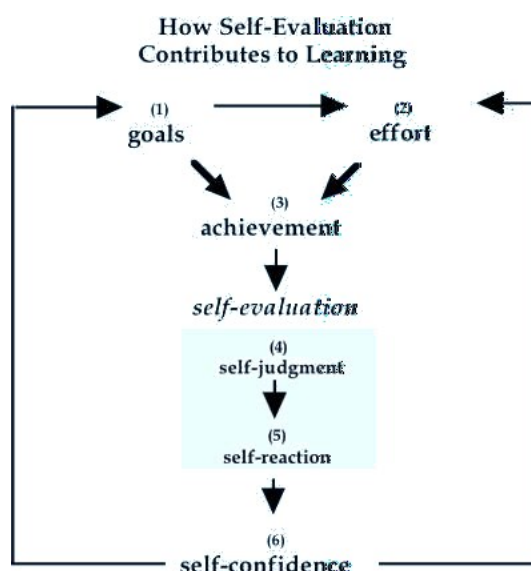


Figure 20 How self-evaluation contributes to learning (Rolheiser and Ross, ND)

A positive learning experience should therefore include timely feedback which explains why a contribution to a forum is seen as more, or less, appropriate and how it might be improved (Perryer et al., 2008). This provides motivation and shapes both behaviour and mental constructs (Anderson, 2008).

Such self-assessment of the learning process and outcomes came in two forms. The Student Evaluations of the Module (SEMs) and reflections made on the process presented in the coursework. Stakeholder evaluation (Papas et al., 2011), in this case the evaluation of the design by students, would be available through these SEMs and along with their reflections on the process would provide valuable insight and evaluation of utility. It should be noted that this process is not compulsory and that students engage in these feedback processes of their own free will so as with interview and focus group motivations (4.3.6), motivations to engage in these processes should also be considered. In addition, focus group discussions were held and fora, in the module's virtual learning environment, Moodle, were created for

students to give advice and share their learning experiences with the students of the following year.

Finally, as this is an academic exercise at NUBS in China, the assessment of the academic work produced by this exercise – the 5,000 word report - was again conducted in accordance with the marking criteria (Appendix L), by the tutors involved before being second marked, third marked internally in the UK and then assessed externally, in accordance with University of Nottingham regulations.

These various evaluation methods have been summarised below in Table 26.

EVALUATION CATEGORY	EVALUATION METHOD	DATA EVALUATED
Stakeholder	Student evaluation of module	Experience from module
	Self-assessment in reflection on process	Coursework reflections
		Online forum reflections
		Focus group discussions
Researcher/Tutor	Communication analysis (LO/DM-See section 5.6.3.2)	Emails
		Online fora
		Group meeting notes
	Marking process	Group coursework

Table 26 Evaluation methods used in this research

### **4.3.9. Information Technology**

#### **4.3.9.1. Introduction**

Many different tools were used to support data collection in this research some of which impacted upon the nature of the interactions from which data emerged. These tools, selected due to their availability and supporting function, are listed in the following sections with some detail of how each was employed and may have had an impact in these data collection settings.

#### **4.3.9.2. Microphones**

In focus group discussions, multiple digital microphones, made available by the University's IT-Services department were borrowed and scattered around the room. Between 3 and 5 microphones were used in this way. Some placed strategically by whiteboards or placed on the desk. On three occasions, malfunction or poor positioning rendered the recording from a microphone useless for data capture.

Recording technologies generally had negative initial impacts on the time it took for groups to engage in discussion, since they made perception of a 'permissive' 'non-threatening' environment harder to realise (Krueger and Casey, 2000). However, in order to achieve redundancy and ubiquity, many such devices were used. This approach of redundant data collection providing strength-in-depth was found to be effective and worthwhile. Later, the mobile phone was found to be less intrusive as a recording device, indeed in some cases, the participants own mobile phones were used for sound recording.

#### **4.3.9.3. Video Cameras**

For similar reasons, two or three cameras were used to record each session. These were again sourced from the University's IT-Service department. Cameras were recognised in the focus groups as obtrusive in developing a relaxing atmosphere for the focus group activities, but their requirement was recognised. Fortunately the equipment was of good quality, enabling cameras to be placed at

a reasonable distance from the group. However, this distance, while reducing perceptions of intrusion led to a greater dependency on microphones for sound transcription. These separate camera angles helped identify who was speaking when transcribing both the video and microphone audio.

#### **4.3.9.4. Digital pens**

Digital pens were also used in focus groups and were found to provide some of the best audio recordings due to their placement in the hands of the respondents and the natural positioning close to the speakers. This technology also provided both a hard copy of the handwritten notes of respondents and a digital, time-linked recording, known as a 'pencast', associating what was being said when the text was written.

#### **4.3.9.5. White boards**

The classrooms selected for the focus groups were chosen specifically for their standard size for this type of interaction in UNNC seminars but also for the inclusion of large whiteboards to enable focus groups to use this medium to collaborate in solving the various tasks set for them to complete as a group.

#### **4.3.9.6. Paper**

Paper and pens were also used to enable observers, researchers and participants to take notes, sketch during the focus groups. Tasks involving sorting and defining themes / factors were often addressed by creating a card for each theme identified by the group, before they were classified and or added to the maps being developed.

#### **4.3.9.7. Online communities**

*"What attracts young people to the Internet is not immediately apparent to an older generation of teachers, and the 'teacher knows best' model of education delivery is still commonplace (despite the 'doctor knows best' model of healthcare delivery now being discredited)."*

*Perryer et al. (2008)*

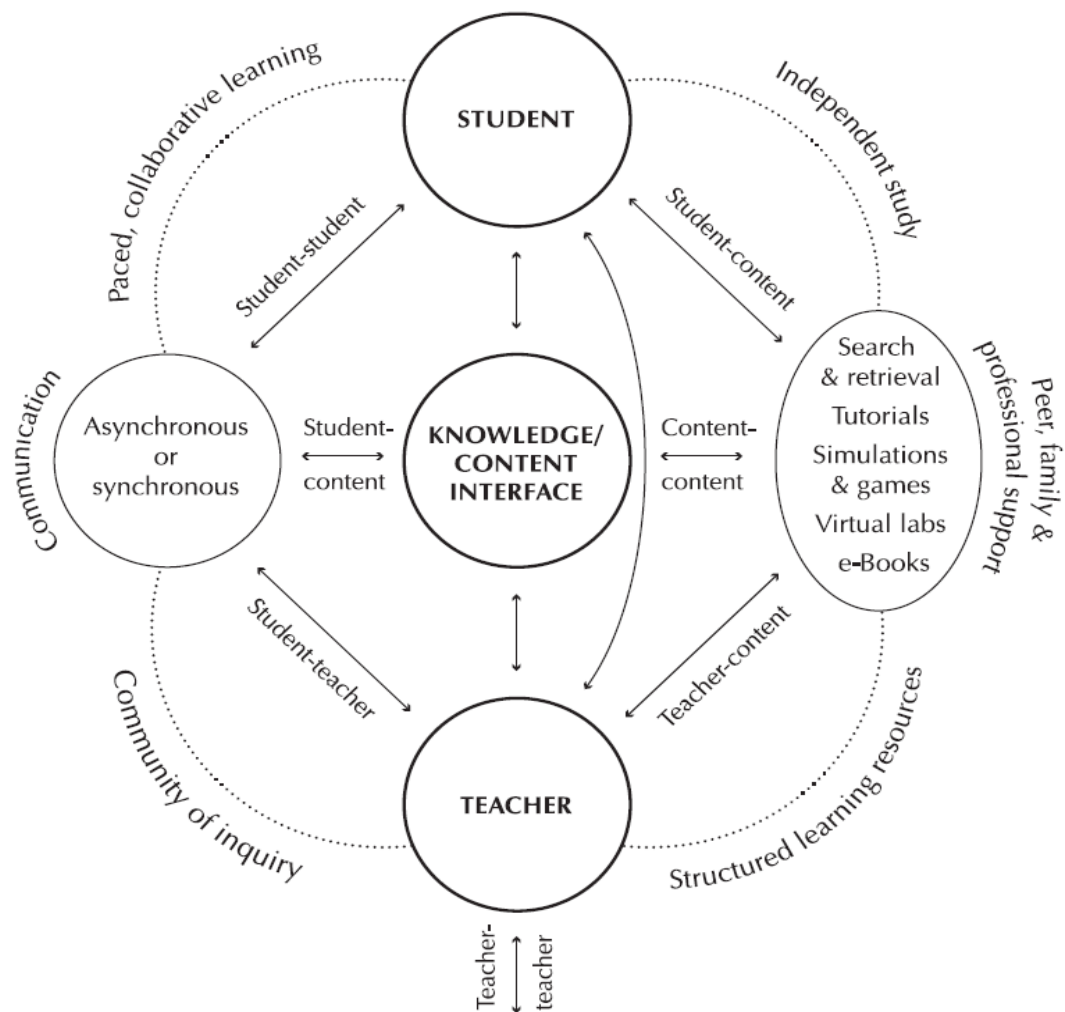


Figure 21 Types of learning in online interactions (Anderson, 2004)

At the time that this project started, UNNC's Information Services department were providing seminars to demonstrate the WebCT product to tutors, for use in providing learning interfaces for modules. The implications of moving to an online based learning environment was not expected to impact negatively on the learning environment for the module, since the online environment would be introduced in addition and complementary to the existing seminar and lecture interactions. However, gaining a better understanding of 'best practice' was considered important, since such a move would involve a significant amount of time and endeavour to successfully implement.

Online multiple choice tests are seen to be a very effective way of enabling formative self-assessment (Anderson, 2004:281). Banks of self-assessment questions were therefore implemented into WebCT in 2010. Unfortunately,

migration issues, as a University-wide implementation of a new VLE, Moodle, was rolled out, prevented the inclusion of such tools in the 2011/12 cycle of this research, but these were resolved for 2012/13.

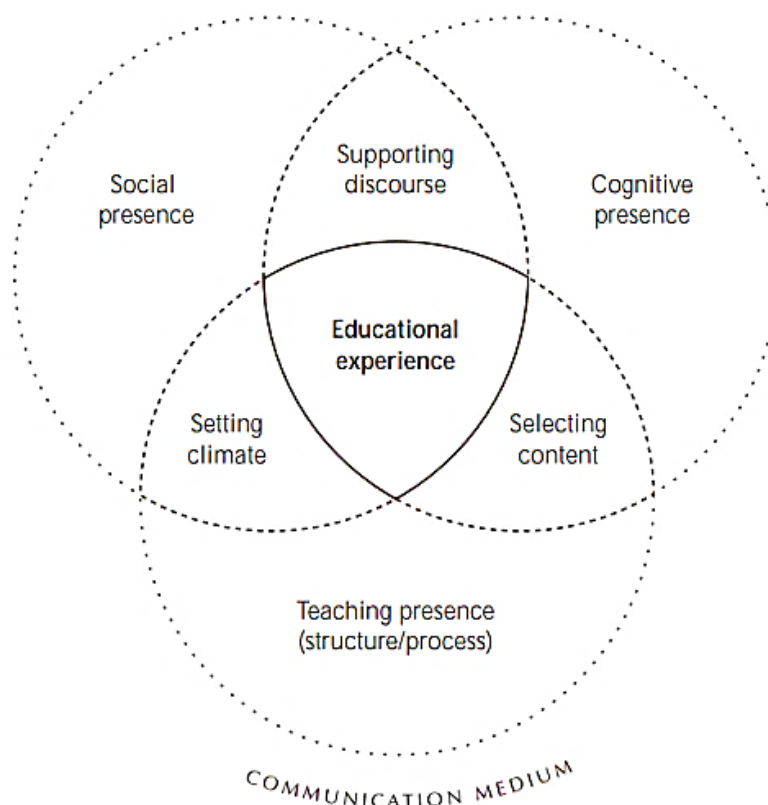


Figure 22 The three critical components to an online community (Garrison et al., 2000)

Taking Garrison et al.'s (2000) model (Figure 22) as a guide, (Anderson, 2004:228) discusses the role of the teacher and the debate over the extent to which a teacher in such an environment should step into the role of facilitator, rather than content provider. It seemed clear that while moderation and control would need to be maintained, a more collaborative community would be possible if students were given a right and a responsibility to influence content on the site.

A teacher stepping into the e-learning environment should be equipped with the understanding of and skills needed to work in such an environment (Anderson, 2004:274). Fortunately, the author had some experience in using VLE interfaces and therefore had sufficient technical skills to navigate and interact effectively in an online environment. However, he had no experience with teaching online, and

this lack of experience in online teaching presented a new challenge. The challenge was essentially one of timing: allowing the relationship between teacher and student and student to student to change to one where the contributions of members of a learning community were judged on their content rather than on the position of the contributor in the perceived hierarchy of the community.

Communicating by writing may be less emotionally stressful than speaking in a classroom environment, since it draws more on the studied English language than when speaking, eliminates much of the anxiety created by the direct identification of the speaker and the speed at which speaking occurs, relative to writing, and may reduce factors relating to group unfamiliarity (Tani, 2005). The importance of taking cultural values into account when examining the interface of humans with information systems has been highlighted in the literature and cross-cultural researchers have been criticized for failing to shed light on practices and techniques dealing with this interface (Jones and Alloney, 2007).

In 2012/13 to experiment with online fora, as a means of supporting student communication and collaboration outside of the classroom environment, bulletin boards were used as part of the student group projects. Assigning roles and ways of approaching the problem set to the students (Yandell and Giordano, 2009) was achieved by splitting each class of approximately 20 students into 3 groups, which were named 'imaginatively' as groups 1, 2 and 3. Groups 1 were assigned SSM, Groups 2, User-centred and Groups 3 Evidence-based approaches to addressing the problem set. Three online communities were then created, one for each approach. All students were able to observe the content of these community fora but, in some fora, only those students in the appropriate group to that approach were enabled to contribute to them.

#### **4.3.9.8. Other**

A variety of other technologies were used during the research process including:

Digital phones and cameras to capture still images at each stage of completion of focus group activity.

Personal computers were used to search, store and analyse literature and data and, for communication between researcher and assistant and researcher and participants, email played a major role in establishing communication, transferring documents and supporting conversation. A personal computer was also used to support the following software:

<b>SOFTWARE</b>	<b>PURPOSE</b>
Mendeley	For cataloguing references used (See 2.2.3).
Endnote	For cataloguing references used (See 2.2.3)
MS Excel	For the initial analysis of focus group questionnaires
MS Access	For analysing online communications and emails
Nvivo	For analysing each of these data streams (See 5.2)
MS Word	For writing the thesis

Table 27 Software tools used in this research

#### **4.3.9.9. Reflection**

While discussing the technology used during the research, it is important to recognise the impact that such technology had on the interactions. In contrast, technologies like the digital pen provided a useful control mechanism to change the discussion hierarchy and to share the focus between group members. This was also found true of the whiteboard and pens and paper, each technology being used to enable every member to contribute equally to the outputs from the focus group interaction. Thus the impact of the technology was not only recognised but was harnessed to influence group dynamic.

As the volume of data captured become more substantial, capacity to store the data became an issue. Multiple methods of backup were also employed ranging from portable hard and USB drives to cloud based solutions. This did not prevent the loss of some audio data in 2012. Fortunately, the video recording that was lost was one of three video recordings and, while the transcription process had to be repeated, with the help of the digital pen recording it was possible to piece together the transcription again using these multiple sources.



#### **4.4. Reflection on research methods**

Thus the work of Trauth (2001) has provided a useful framework for analysing and reflecting on the starting point for this research project, informing the decision-making process of method selection. These methods are varied although mainly qualitative in nature. The specific tools that would be used for data collection and the way in which the third phase would be designed, were informed by the literature, practice and those people - the students - who would experience the change.

By using multiple methods of gathering data from the same individuals, both in isolation and as a social group, contamination of data from each method, by researcher influence or respondent agenda, might be better recognised and the findings thus strengthened. The first suggestion made by Stening and Zhang (2007:136) to researchers undertaking research in China is the adoption of such a multi-method approach to enable findings to be compared and thus bring any such distortion to light.

## **5. Data Collection and Analysis**

### **5.1. Introduction**

Due to the iterative nature of the research project, data collection and data analysis are inherently inter-dependent, the one informing the other. As such, while this chapter is focused on the analysis of data arising from the three phases of enquiry, the nature of the approaches taken and tool developed during this collection phase also influences the nature of the data captured and analysed.

In the first phase of the project, problem identification was the focus, in the second phase, participants were tasked with identifying strategies for solving those problems in the process. In the third and final phase, the focus of attention became those problems where the strategies emerging were within the control of the researcher to adjust. This area of control was the Accounting Information Systems (AIS) module, the design of small group interactions and the group project to which they related. In the third and final phase, such strategies and alterations made based upon experimental evidence from previous iterations of the learning cycle were tested and the effect of these strategies on the teaching and learning were then analysed.

This chapter introduces the computer assisted qualitative data analysis software package, Nvivo, used to support the analysis, before presenting the analysis of the data captured in each phase of enquiry, from the identification and drawing together of themes, to the testing of strategies in the small group EBD learning interactions.

## 5.2. NVivo

Data for textual analysis was collected in questionnaires, pencasts and transcriptions of video and sound recordings. Questionnaire data was transcribed into an Excel spreadsheet, pencast (from the digital pen) and multimedia recordings were transcribed and then imported to NVivo, analysed and then coded following the process described in the Analysis section 2.2.5 and in accordance with instructions provided in the many online videos and guides published online by QSR International (QSR International 2015).

NVivo is as a 'code-based-theory-building' program designed to store, code, retrieve and analyse texts and multimedia (Gibbs, 2002). Initially, the researcher familiarised themselves with this database management system by using NVivo's transcription tools to analyse the first phase audio and video captured (Figure 27).

Further learning of Nvivo was facilitated by online training videos made available by the product manufacturer. This software enabled the researcher to bring all the different streams of data together into one place, store them, code them and analyse them against a framework of all the themes which emerged as the data was analysed. The development of this framework of relationships is achieved in NVivo by coding the data into segments that the user names and defines. This coding process enables emerging themes to be identified and recurrences or relations between and of themes to be stored linked to, but independent from, the data being analysed.

Following the constant comparison method, an approach tailored to producing inductive theory, three stages of analysis, open coding, axial coding and selective coding (See 2.2.5) were adopted (Pivec (2006), Gibbs (2002) and Strauss and Corbin (1998)).

The design of the research interactions ensured that many of the themes emerging had already been coded (named and defined) by the respondents, this

greatly assisted in the open coding stage – the stage where, typically, the researcher would identify such themes emerging from the data. Thus many open codes were generated by the respondents themselves, without reference to the literature, or prior knowledge of the researchers. Other open codes, identified by the researcher and research assistants were coded separately.

The axial coding stage identifies relationships and associations between open codes, drawing together a network of related nodes (Pivec, 2006). This process of open coding and axial coding is an iterative process; changing and adjusting as more data is analysed and new or related themes emerge. In those groups where causal mapping had been a part of the research process, these linkages between the nodes had already been identified, although not always named or fully defined in their map output.

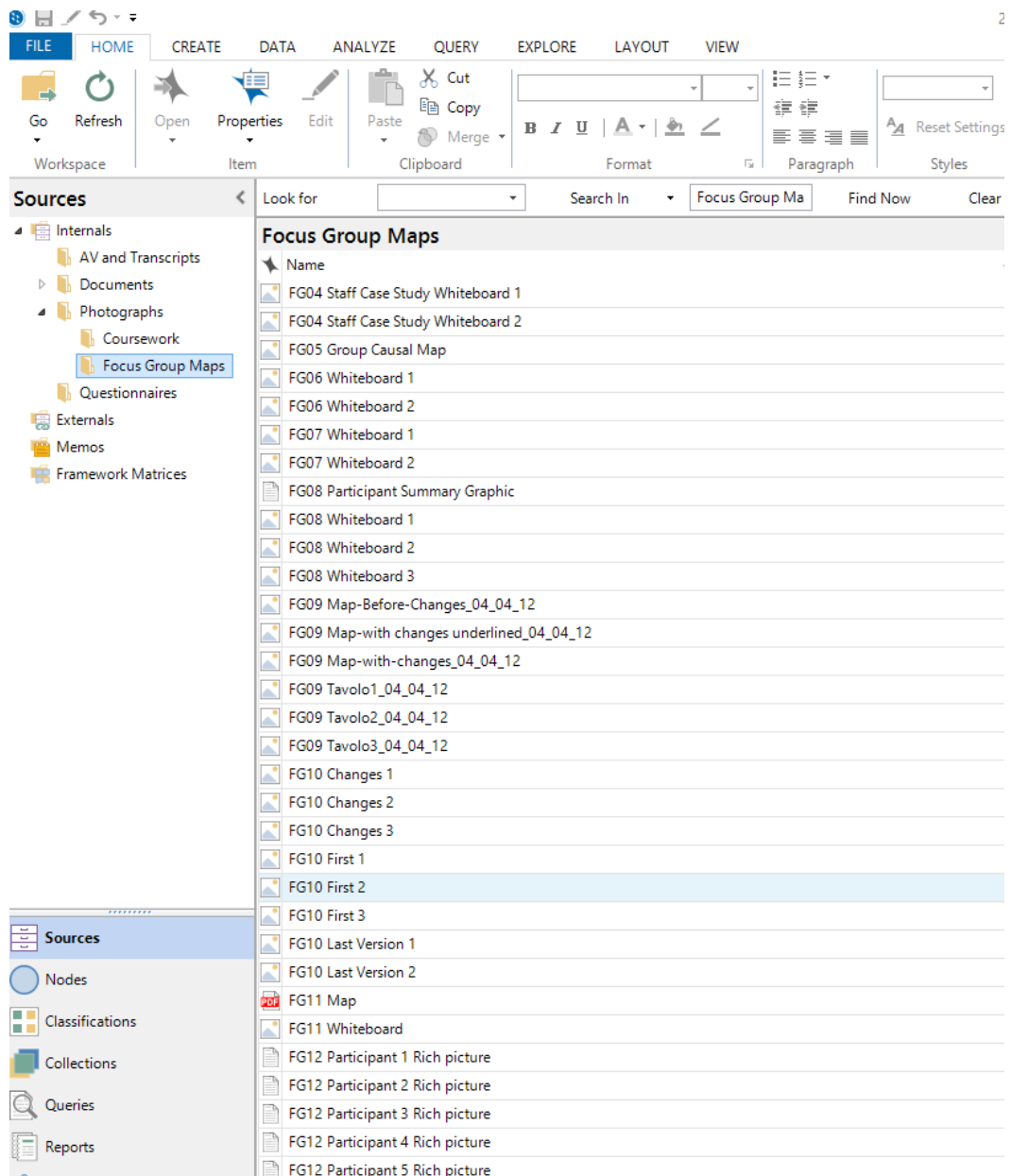


Figure 23 Screenshot from NVivo showing FG map list

Different groups identified different themes and axial groupings and so, periodically, major causes of change or reflection on this coding, were the analysis sessions carried out following each round of data capture and the analysis discussion involving the research assistants. These sessions often went on for several hours and at the completion of each, the outputs were captured and later entered in NVivo and coded (re-coded).

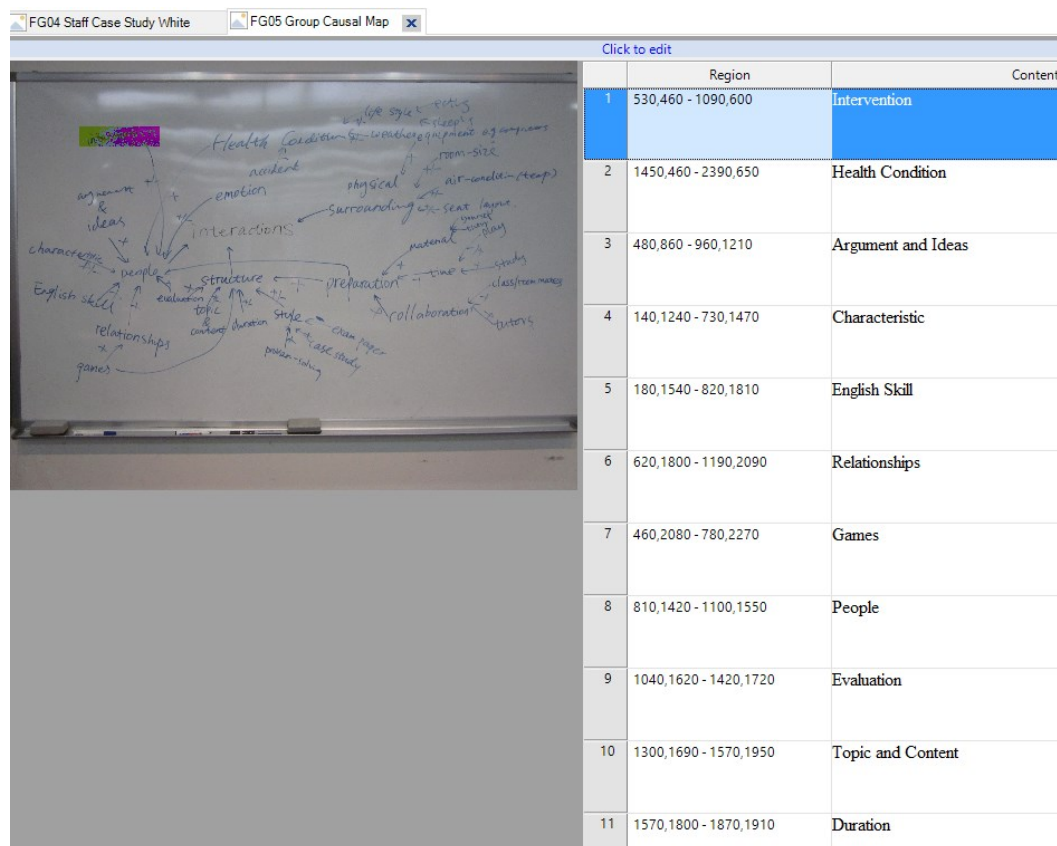


Figure 24 Screenshot from NVivo showing FG map coding

Finally, in the 'selective' coding stage the researcher tried to make sense of the emerging story and identify the central themes (Pivec, 2006). The aim of this stage of the process was to relate central themes into a theory. To illustrate the impact of this stage of the analysis, the research project was initially asking questions and causing focus on the term '*participation*', since this was the prevalent term arising from the original LCF meeting. The first two iterations of the pilot phase of the research both indicated that while '*participation*' was important, '*communication*' within groups and between stakeholders were the critical central themes in the process. This led to a change in the phrases used in the research project from '*participation*' to '*communication*'.

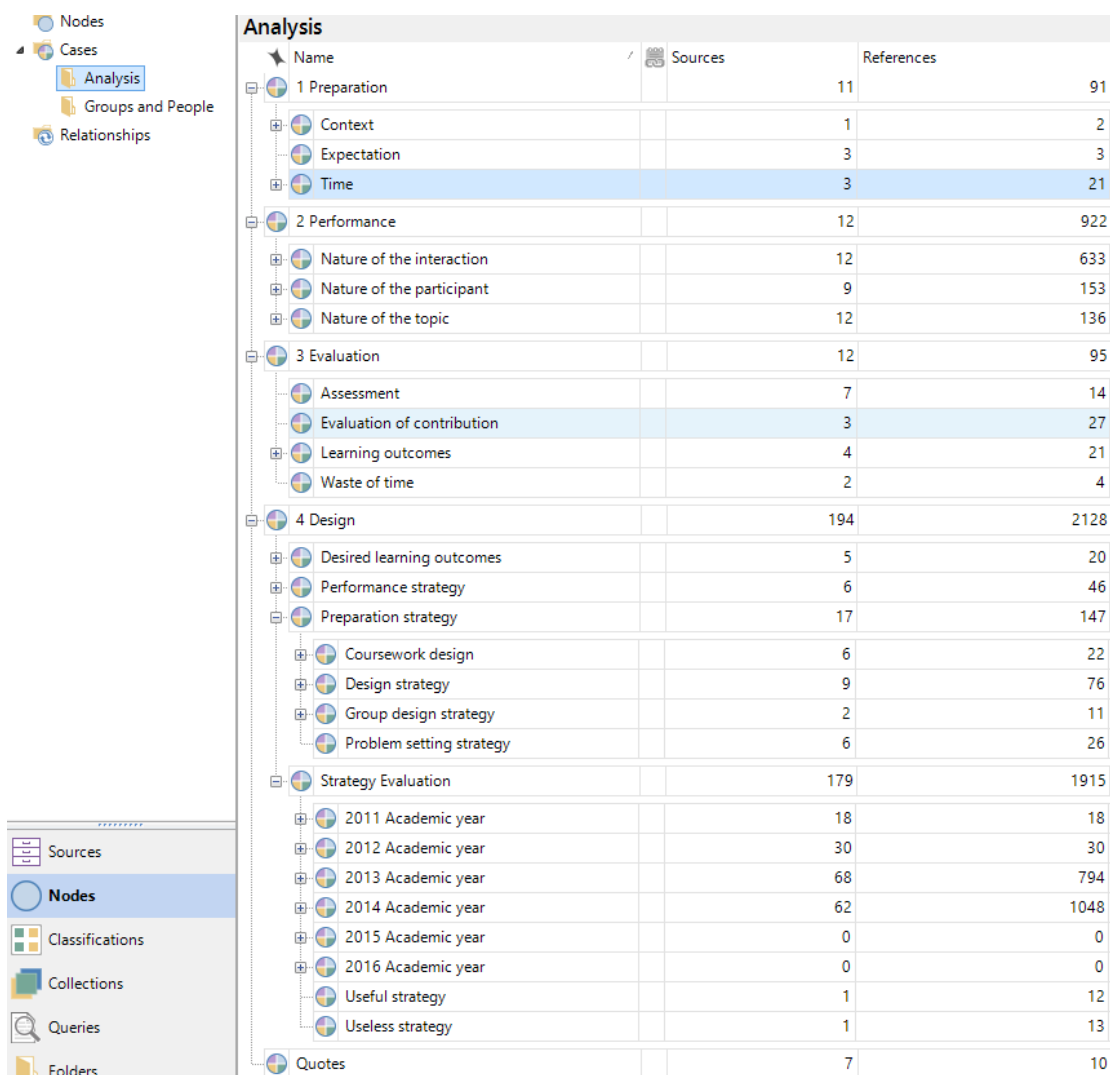
*"An essential part of theory building is comparison of emergent concepts, theory, or hypotheses with the extant literature. This involves asking what is this similar to, what does it contradict, and why"*

Eisenhart (1989:544)

Groups and People			
	Name	Sources	References
	FG01	8	1706
	---	1	25
	01	2	305
	02	2	274
	03	2	76
	04	2	111
	05	2	129
	FG02	6	102
	Student 001	3	47

Figure 25 Screenshot from NVivo showing FG and participant nodes

From the evidence-based perspective, in addition to the themes emerging from primary data (Stakeholder evidence), NVivo allows other evidence such as researcher notes (Practitioner evidence), academic and practitioner publications ('Scientific' evidence) and information about the problem/context (Contextual evidence) to be directly embedded into the project, enabling associations to be forged between the framework of nodes developed in the analysis, and this evidence.



The screenshot shows the NVivo software interface. On the left is a sidebar with a tree view containing 'Nodes', 'Cases', 'Analysis' (selected), 'Groups and People', and 'Relationships'. Below this is another sidebar with icons for 'Sources', 'Nodes' (selected), 'Classifications', 'Collections', 'Queries', and 'Folders'. The main window is titled 'Analysis' and displays a hierarchical tree of nodes on the left and a table of sources and references on the right.

Name	Sources	References
1 Preparation	11	91
Context	1	2
Expectation	3	3
Time	3	21
2 Performance	12	922
Nature of the interaction	12	633
Nature of the participant	9	153
Nature of the topic	12	136
3 Evaluation	12	95
Assessment	7	14
Evaluation of contribution	3	27
Learning outcomes	4	21
Waste of time	2	4
4 Design	194	2128
Desired learning outcomes	5	20
Performance strategy	6	46
Preparation strategy	17	147
Coursework design	6	22
Design strategy	9	76
Group design strategy	2	11
Problem setting strategy	6	26
Strategy Evaluation	179	1915
2011 Academic year	18	18
2012 Academic year	30	30
2013 Academic year	68	794
2014 Academic year	62	1048
2015 Academic year	0	0
2016 Academic year	0	0
Useful strategy	1	12
Useless strategy	1	13
Quotes	7	10

Figure 26 Screenshot from NVivo showing nodes, sources and references identified in the analysis

As additional themes emerged from the primary data which had not already been tied to other evidence, the researcher engaged in targeted searches the academic and practitioner literature relating to that theme. Related literature was then incorporated into NVivo and additional codes – often to do with differing names for themes - were then added to relate these new themes to the literature. Again such themes were coded separately.



## 5.3. Transcription

Due to the diverse range of data sources captured in this research, the first stage of analysis involved the transcription and organising of the data into a manageable form for analysis.

Data streams requiring transcription included multimedia recordings and tangible outputs from 19 research group discussions of between 2 to 3 hours duration, included video, microphone, digital pen, questionnaires, respondent notes, observer notes and researcher notes.

The causal maps captured during several of these focus group activities required a different form of analysis in Nvivo (Figure 24), before the textual elements could be related and used.

Various free-to-use transcription software solutions were tried before it was concluded that the process of transcribing and importing to NVivo for analysis was not efficient, despite the better control interface that some of these packages provided.

Data was therefore transcribed directly within NVivo, video and sound files being linked directly to the text captured, on a single timeline, as it was entered.

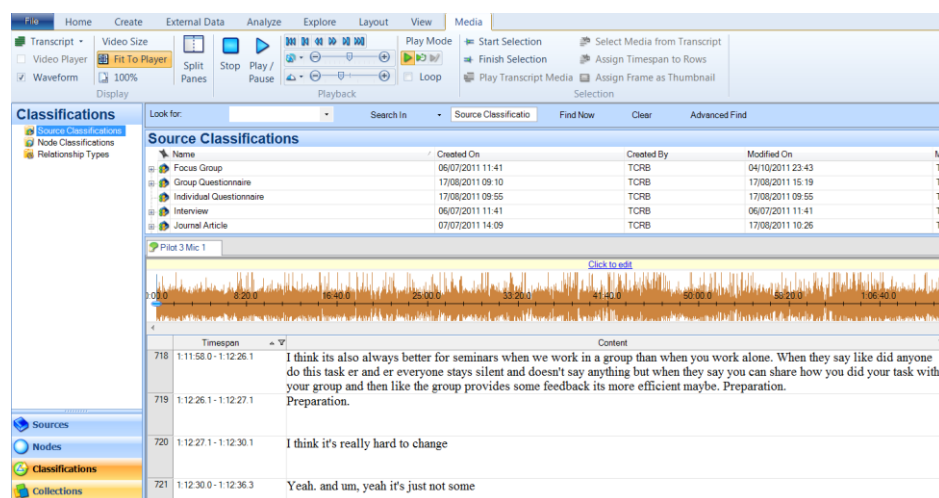


Figure 27 Screenshot from Nvivo showing an example of a sound recording transcription

To ensure accuracy, the second phase of the analysis of the transcriptions involved the presentation of the transcribed text to the participants for confirmation and accuracy (Creswell, 1998). From these interactions it was soon clear that too much data had been transcribed, distracting from the main focus of the respondents' conversation. In some cases, where despite multiple recordings and people involved in attempting to transcribe the data, it proved impossible to understand, or for the respondents to recall, exactly what had been said and sometimes, even when the transcription was clear, respondents wished to change the transcript to correct their grammatical errors.

Learning from this experience, later focus group recordings were filtered before transcription, to reduce the amount of noise captured and, instead of meeting with all respondents, to discuss the transcript, only those sections of text which were considered relevant to the research and that could not be transcribed without their help, were addressed in short interviews/discussions.

Occasionally respondents would use Chinese instead of English in their conversations. Research assistants found no difficulty in translating these short exchanges, unless whispered. Respondents questioned about these interactions suggested that they were not relevant to the conversation. However, markers were attached, to these few blocks of text, in the analysis.

While this transcription became a fairly tedious if not exhausting process, and required a significant investment of time, it ensured that the researcher gained a familiarity with the data captured from each source which became invaluable as the analysis phase began.

Following transcription the transcribed data was combined with other data sources using NVivo, as discussed above. In the following section the analysis of the first phase of this research is discussed.

## 5.4. Grounded Investigation phase

### 5.4.1. Introduction

Data captured in the Grounded Investigation (GI) Phase consisted of tangible outputs from focus group activities including individual and group questionnaires, ranked lists of themes defined during the tasks and maps summarising the relationships between those themes. In addition video and audio recordings from the focus group interactions, evidence identified from the literature using a focus group and hard-copy journals, and themes identified while the researcher presented an Ivey school case study on teaching and learning to the entire NUBS in China faculty in September 2011, formed data streams for analysis.

The focus groups relating to the GI phase of the research are listed in Table 28 showing their interrelations through inputs and outputs.

SESSION	INPUTS	OUTPUTS
1		Themes and Maps
2		Themes
3		Themes
4		Themes
5		Themes and Maps
6	FG1-5 Themes	Consolidated Themes and Maps
7	FG1-6 Output	Summary Theme Map (Figure 30)
8	FG1-6 Output	Summary Causal Map (Figure 31)

Table 28 Focus group sessions inputs and outputs

One feature of the methodology employed in the first phase of this research is the analysis of data by participants and cultural insiders to the research. In the following sections, first the participant analysis and then the analysis by the researcher are discussed.

### 5.4.2. Analysis by participants

As described in the Research Method chapter (4), the themes identified and defined in the first phase of the project (Sessions 1 to 4 in Table 28) were numerous, but were often repeated or defined differently. To address issues in research design for different contexts raised in the literature (e.g. Kaigler-Walker and Gilbert (2009)), two additional focus groups (Sessions 5 and 6 in Table 28) tasked with analysing and consolidating these themes took place, ensuring cultural insider involvement in this analysis – the participant analysis.

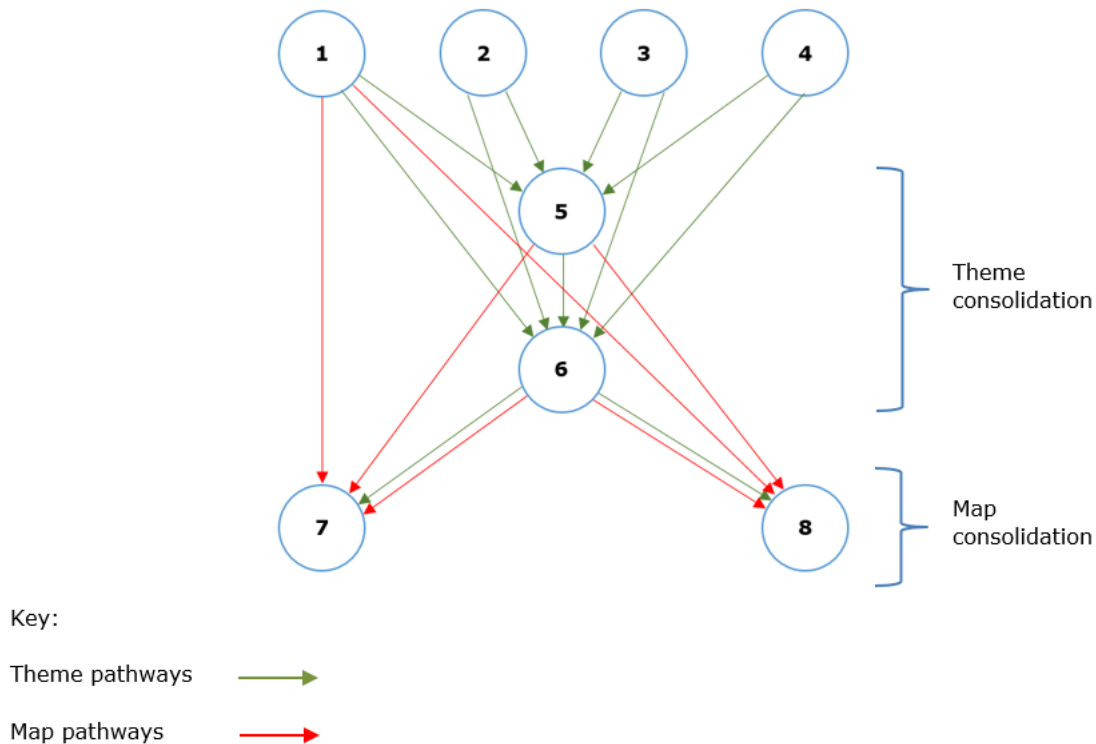


Figure 28 Pathways of theme and map outputs between focus group sessions (1-8)

The process of consolidation comprised of four steps, parsing and coding, synthesising, reducing and auditing (Scavarda et al., 2006:267). These groups were time consuming but, in themselves revealing, as insider knowledge of those involved in the process provided further insights to those emerging naturally from the data. During these interactions, the researcher played the role of facilitator

and, through the use of scripting, controlled their own influence over the interaction.

In this process, the themes identified by the participants in the preceding focus group sessions 1 to 4 (and 5 for the final session 6) were written, along with their definitions, on pieces of paper. These consolidating focus groups, which consisted of students and tutors, then went through each theme as they were drawn from a hat, and discussed the definition given to them before categorising them.

Each causal value, or theme, was discussed and, based upon both name and definition was placed on the table, in a form of matrix, to group like or related themes together (Nadkarni and Nah, 2003:416). Having parsed each theme and reached a shared understanding of them, these themes were then consolidated.

The majority of the consolidation process proved relatively easy, but then problematic themes like Oral English level, Written English level and Language skills were seen to be challenging and disagreements became emotional to the point where the researcher was asked to intercede and rule to what extent themes should be reduced. The rule adopted was that if one participant felt that a difference was material, the group would not combine themes but would instead seek to define them more closely.

Having consolidated and defined themes into a final list, their influence on engagement and ranking of importance was then discussed and agreed as a group. The resulting list of 36 themes, presented at the end of the session 6, are listed in Table 29 below.

NAME	DEFINITION	INFLUENCE	RANK
Participation	Engaging in the activity by action or interaction verbally, mentally and physically.	+	1
Communication	Externalising, sharing perspective, listening and questioning.	+	1
Good topic	Topic that everybody is interested in	+	1
Preparation	Hard work before seminars by both students and tutors. Do required tasks and come up with their own idea	+	1
Confidence	Be confident to express themselves	+	2
Language Skills	Confidence level in communicating in English	+	2
Written English Level	Ability to read/write in English. Can understand and express English well.	+	2
Oral English level	Ability to express their own ideas, make others understand the ideas and to understand the ideas of others	+	3
Characteristics	Personality of Staff + Students	+	3
Degree of Activeness	Ability and willingness to negotiate with other group members and responses from others. Willing to communicate with others and others show responses.	+	3
The knowledge of students	The students understand and have some knowledge over the topic	+	4
Arguments	Different Opinions	+	4
Teaching	Content and format of a seminar delivered by a tutor. Deliver the content in a relaxing and interesting way.	+	4
Idea sharing	Willingness to share related knowledge / ideas	+	5
Confidence	Ability to share ideas	+	5
The knowledge of the tutor	Then tutors have a good knowledge about the topics	+	6
Tutors' organize	The way the tutor inducts the student	+	6
Topics	Contents	+	6
Group dynamic	Strange feeling of a new environment. Good relationship between members and good ability of members.	+ / -	6
Evaluation	Staff + Students	+	7
Topic	Easiness and attractiveness of a topic. Interesting and appropriate questions.	+	7
Freedom	The freedom to talk about everything	+	8
Willingness to overcome the initial embarrassment	Someone/thing to break the ice	+	8
Interventions	Frequency and timing. How students react to what you say	+	8
Class size	The number of students in a seminar. Appropriate number of students for effective class delivery.	-	8
Duration of Seminars	How long it lasts. How long each task lasts.	+	9
Environment	Friendly, open, relaxed communication	+	9
The result of the seminars	The result of the seminars for students	+ / -	10
Efficiency	Efficiency of the seminar	+	10
Room Layout	Temperature control + Furniture Layout	+	10
Group Size	Number of participants in a group project	+ / -	11
Duration	Time lasts	+ / -	12
Relaxing atmosphere	everybody feels relaxed	+ / -	13
Members' value of the topic	a common understanding of the topic	+	13
Gender Balance	The number of girls is equal to the number of boys	+ / -	15
Know each other	Familiarity with each other	+ / -	15
Environment	The temperature, camera or something make people feel uncomfortable	-	17

Table 29 Final consolidated theme list produced by focus group session 6 participants

Subsequent to this theme consolidation process, 2 further groups of research assistants and academic staff (Sessions 7 and 8 in Table 28) were tasked with

analysing these same themes into maps, armed not only with these consolidate themes but also with the maps generated by the previous focus group participants (Sessions 1, 5 and 6 in Table 28). From these two analysis groups, two maps were produced. The first group was permitted to produce a map with any format preferred by that group. The second was asked to map the relationships between themes.

The first analysis and consolidation process went through several iterations:

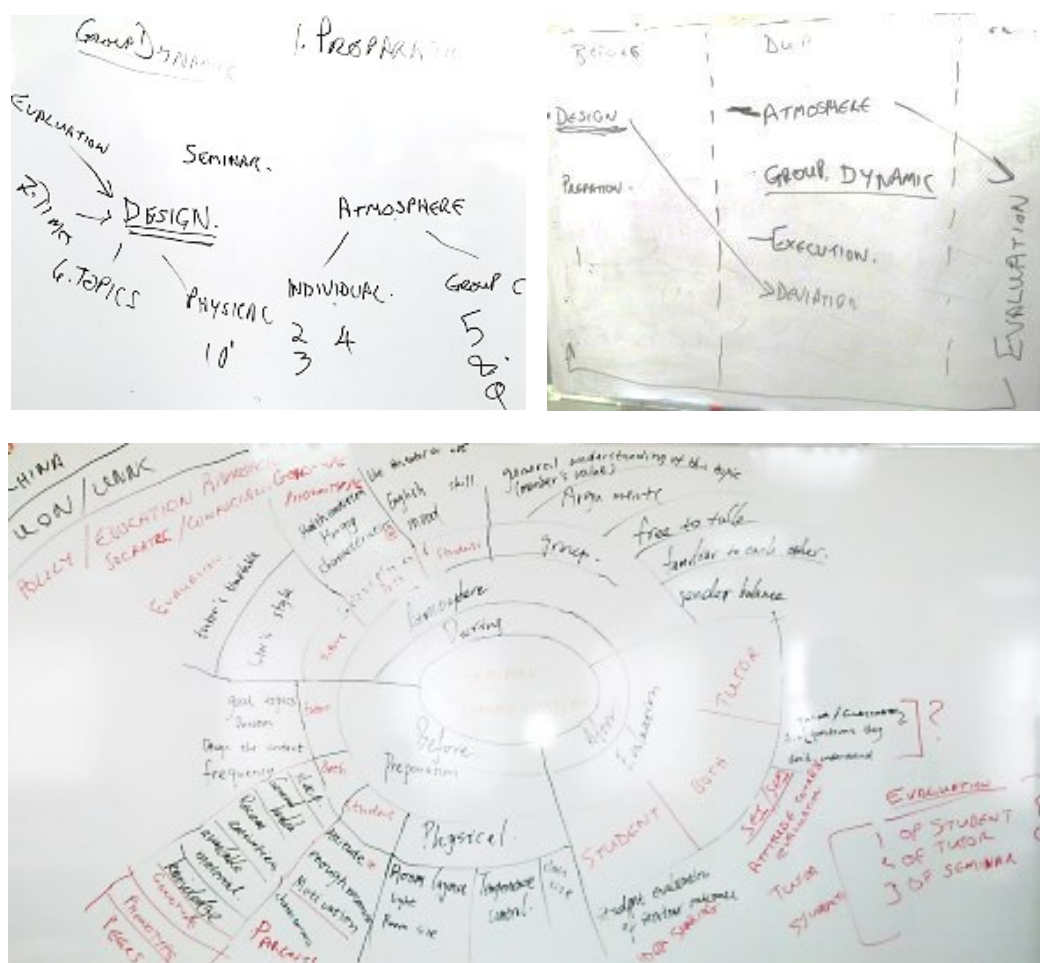


Figure 29 Stages in the development of Figure 27 Summary map

The collaborative nature of this stage of the research, involving cultural insiders in this map comparison process, led to further insights into the ways in which such maps might be interpreted and compared.

The final map (Figure 30) that emerged from the first or these two map analysis sessions (Session 7 in Table 28) represented a before, during and after picture of

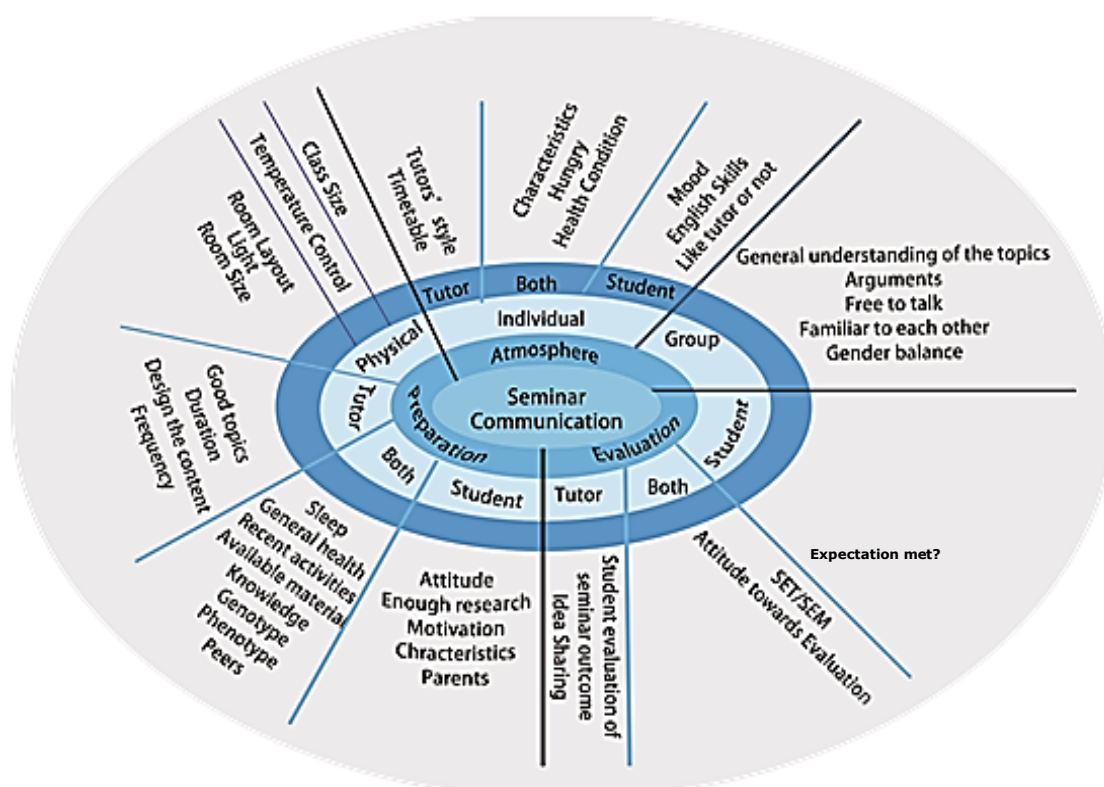


Figure 30 GI phase Summary map showing 41 factors - produced by focus group 7

the themes, the timing of their influence and the participants to whom they applied.

The second map (Figure 31) emerging from the second map analysis session (Session 8 in Table 28) was generated with more focus on the individual and group maps produced during the previous groups and showed the interplay of 26 consolidated themes with each other.

In Figure 31, the colour of the factor in the map indicates who the stakeholder(s) perceived to have most influence over that factor: Black – 'Administration', Blue – 'Tutors', Red – 'Students' and Brown – 'Tutors and Students'.



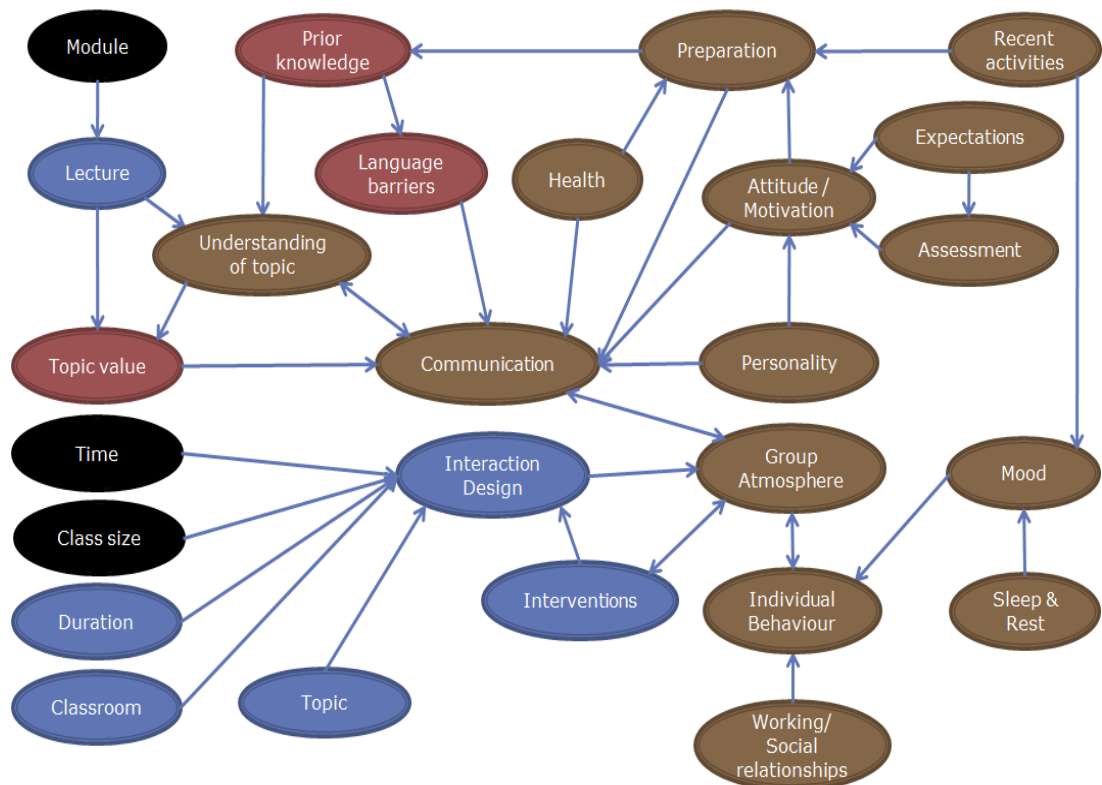


Figure 31 GI phase Summary causal map produced by focus group session 8

In a subsequent focus group (Session 9), conducted in the SD phase of the research, the differences between these representations of the same phenomenon were explained by the difference in participants' 'comfort zones' in the extent to which consolidation or separation of the factors identified might be rationalised.

### **5.4.3. Analysis by researcher**

#### **5.4.3.1. Introduction**

As described in the section 5.2, the researcher carried out the analysis of this predominantly qualitative data using QSR International's NVivo 10.

Each theme identified by participants in the focus group was named and defined by those participants, so the researcher faced the same dilemma of matching, consolidating or separating of these themes as the analysis progressed.

As with the participant analysis of themes emerging from focus group interactions (Section 5.4.2), in the researcher analysis, the themes were seen to fall into the three areas of Preparation, Performance (Atmosphere), Review (Evaluation) areas, but a fourth and additional area of Design was also seen as discreet from the other three. This may have been due to the role of the researcher as tutor responsible for the design of the interactions and therefore having an eye not just to the experience of the seminar/projects but also of setting/designing those T&L interactions.

Using these four themes as a framework of analysis, the following sections discuss the themes relating to the first three – Preparation, Performance and Evaluation, while the Design themes have been incorporated into the Strategy section (5.5).

Upon reflection, the four broad themes identified by the researcher, of Preparation, Performance and Evaluation and Design, may be loosely seen to tie in with Kolb's (1984) Planning for action, Teaching activity, Reflecting and Interpretation stages of the experiential learning cycle (Figure 7).

### 5.4.3.2. Preparation

Definition: Activities engaged in by tutors, administrators and students prior to teaching and learning interactions.

#### 5.4.3.2.1. Introduction

Preparation by the tutor and student for any interaction were recurring themes from all sources of data captured, but since preparation by the tutor has many cross-linkages to interaction design, this aspect of preparation is discussed in that section.

Preparation by students was seen to include both social and learning aspects and so the following section initially follows that vision before environmental, time and expectation settings are discussed.

#### 5.4.3.2.2. Context

Three broad levels of contextual setting were identified - China, the University of Nottingham (UK, Malaysia and China) - UoN and the University of Nottingham Ningbo China - UNNC (Figure 32). The labels for UoN and China being raised to represent perceived hierarchy. The latter being seen as coping, or learning to cope, with the requirements of both contextual influences.

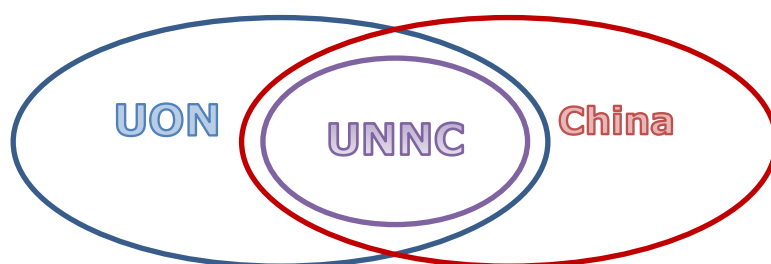


Figure 32 Stakeholder perception of UNNC context

Within the UNNC context, differences in coping responses between schools and disciplines were identified, particularly in the AR Phase of research, where tutors and students from different schools were engaged in the research process – tutors as participants and students as research assistants.

Within the NUBS in China context, Interaction designers (tutors) were seen to be proactive in encouraging preparation *"Yeah they promote [preparation] but it's just a bit hard to change. Maybe the environment is a Chinese environment really"*. Despite this recognition of efforts made by designers, success, in addressing issues in preparation for learning interactions, was seen as limited. This was explained quite well by a Chinese Masters' student who reflected *"I think that's because after receiving 9 years of Chinese education most students feel [they would] just [] like to listen [to] what teachers say and [] to think highly by themselves. [They] don't feel like [] talk[ing] to others about what they think about and also don't [wish to] listen what others [are] thinking. So I think that students don't really understand what participation [] means in UNNC."*

The role of induction processes and the preliminary year at UNNC (Figure 33), conducted in main part by the Centre for English Language Education (CELE), were frequently highlighted and some longer serving tutors recognised improvement in the general approach and attitude of domestic students toward participation, as they entered the second year of study (first year of degree) and began their study at NUBS in China.

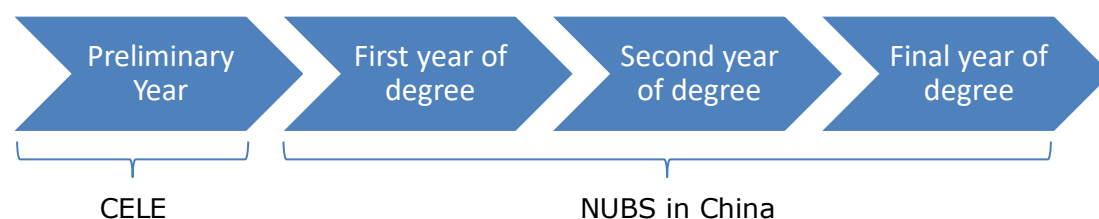


Figure 33 Academic progression at UNNC through NUBS in China

It was also a reflection of several newly appointed tutors that one of the benefits of participating in this research project was that it gave them insights into how more experience tutors had learned to cope in this context.

#### **5.4.3.2.3. Social aspects of preparation**

Students argued that they were more interactive during the teaching and learning activity if they had previously had the opportunity to meet and become familiar with the people with whom they would be interacting.

This line of reasoning led to several discussions about social introductions, ice-breaking activities, self-selected groups and the use of the same group for separate T&L interactions. However, when ice-breaking and self-introduction exercises were introduced, some participants did not like this, seeing it as a waste of time.

#### **5.4.3.2.4. Learning aspects of preparation**

*"Good preparation before seminars can give students a general idea about what will be covered in the seminar so that students won't get "blank" during class."*

Described as *"researching and reading about topics"* or *"homework before seminars"*, this theme emerged frequently as an important explanatory factor for the frustration expressed by students about a general lack of participation, communication, discussion or value of discussion with domestic students.

When asked why a student would choose not to participate in group conversations in seminars, participants suggested that one of the reasons was *"because he does not prepare or just that he does not understand even if he prepares"* and the idea sometimes developed into *"having the time to"* prepare *"for that topic [] to see some references [] so we have more evidence and more [] real points to speak about our topic of our assignment"*.

Several times the nature of the topic was highlighted, with several respondents suggesting that the topic should be *"interesting"* and *"not too hard"*, yet it was also reflected that *"how hard [] the topic [is], is based upon the knowledge of your topic. Maybe should, [research a] background understanding of the question"* and *"Prepar[ing] about the topic in advance [will help] better understanding of the topic and also familiar[ity] with the evidence"*. So an argument developed that

participation was dependent on the nature of the topic, how difficult it was perceived to be and how much time was available to research the topic to become familiar with it. *“even if people [don’t] have experience, they could still participate if they prepared well enough”.*

The motivation of students and tutors both in preparation for and during interactions was discussed extensively, was seen to apply equally to preparation and performance, but is presented in the performance section (5.4.3.3).

#### 5.4.3.2.5. Environment preparation

Within the China context (Figure 32), the joint-venture partner, Wan Li University, was sometimes seen as influential in terms of the physical environment setting. This was not surprising since this partner provides the design, construction, maintenance and campus services, including security and cleaning, for campus buildings and classrooms.

The ‘default’ layout of all classrooms and computer labs available to the business school are designed for what might be described as a traditional teacher/student lecture interaction (Figure 34), which does not lend itself to discursive style seminars.

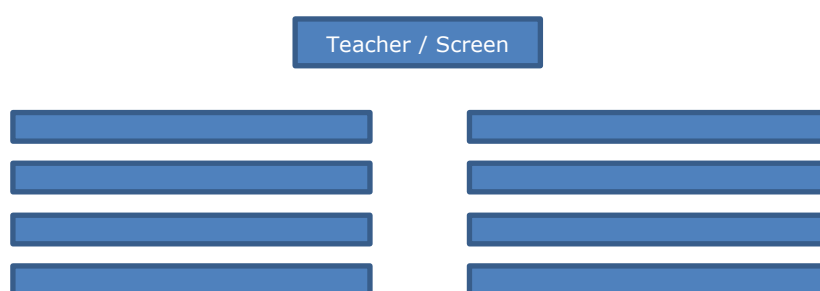


Figure 34 Default classroom layout

It was recognised, in several GI Phase groups, that classroom layouts for computer labs and most other classrooms were not suitable for the collaborative project activities or discussion in which students were asked to engage. This was recognised among both tutor and student participants. While some classrooms were considered suitable for language laboratory seminars, and some were

designed for discursive seminars, there was no space designed for discursive seminars in which computers were also used.

It was therefore seen as an important aspect of 'Preparation' to select a classroom with desks that might be moved, to enable these layouts to be altered to suit different activities. The setting and resetting of classroom layouts was seen by some as a continuing struggle between designers and maintainers of classroom spaces. There was a tangible sense of resentment towards the notices posted on walls that classrooms should be reset to the 'Default' setting.

Various elements such as temperature, lighting, windows and ambient noise, particularly of air conditioning, loud conversations in corridors and rattling doors, were seen to contribute to this theme.

Participants reflected on the difference that having a camera present during the research session made, causing them to feel less relaxed and safe, particularly at the beginning of the session. *"hide the camera and recorder. I can accept using them, but please put them somewhere I cannot find out"*. Interestingly the cameras being referred to, were those used for research, not those implemented for 'security' and present in every classroom.

On several occasions, participant performance was seen to be threatened by the proximity of people outside of the discussion group. Such influences were categorised into tutor interventions (See Performance), people external to the conversation, or those outside the classroom looking in or making the ambient noise invasive to the conversation. Some described this influence as an interruption to the flow of the group discussion, others as a breach of their feeling of safety in their activity.

While there was some disagreement with some participants reflecting that *"comfortable chairs and desks would help me focus on the conversation"* and others that *"I am comfortable as is"* or *"I don't think this is [relevant]"*, the level of comfort

afforded by the classroom setting was generally seen as important for discursive seminars, the quality/softness/stability of chairs particularly so. There was a perception of disparity in furnishing between classrooms and comments were made about chairs and tables that had fallen apart. Tables being wobbly during examinations or group drawing/mapping exercises, was also seen as a problem and distraction.

That students and tutors found furniture to be worthy of discussion, was reflected upon in conversations following one focus group, lending weight to its perceived significance as an environmental distraction.

In contrast, one group of student participants complemented a tutor reflecting on how much they had enjoyed a seminar where the tutor had taken them out of the classroom to hold their discussions instead outside on the grass.

#### **5.4.3.2.6. Time considerations**

Participants spent an unexpected amount of time discussing the importance of time in several aspects, ranging from duration and starting times of learning interactions, to the specific time of day when siesta's were considered a cultural norm and the issues arising from time difference between the three campuses. In the following sections these different time related themes are analysed.

Typically seminars at UNNC run either for 50 minutes, 80 minutes or occasionally 110 minutes and the duration, both of these learning interactions and the group projects was discussed.

If seminars were too long, students suggested that they might lose focus and that they would "sometimes [be] absent minded after a long time discuss[ing]". If they were too short, the conclusion of the assigned task/discussion could not be adequately reached. *"Need to finish the task and limit conversation", "[We] have different experience but the need to reach an agreement. So I held back some of*



*my opinion*". When someone *"wants to [end the conversation, he] pushes for [a] conclusion"*.

A solution proposed was to provide *"less questions to answer"*, so there would be fewer topics to discuss in a seminar. Naturally, there was no consensus on this or what total duration should be set for seminars, or other interactions.

When it came to group projects, the duration of these projects was seen as too long by some and too short by others. Certainly a concern was expressed over the amount of time expended on group projects in relation to the weighting given to those projects.

In terms of frequency, there are typically between 9 and 12 lectures per module at UNNC and between 2 and 4 of the smaller group size seminars. There were several suggestions to *"increase the frequency and avoid the long seminar"* and *"more times for seminars [so that they can] correspond [to] the lectures. That is every seminar will have specific aims [related to] lectures"*.

"The time the seminar will start" was seen as important. Especially "in meal times" when people are hungry and eager to leave to eat, following breakfast, or in the early afternoon, following lunch - *"Afternoon makes people want to sleep"*.

It is interesting to note that despite requests over the years, the predominantly Chinese administration teams at UNNC continue to take a 2 hour break around lunch time. This is seen as a cultural normal, which it does seem to be (Figure 35), but this normal is not yet extended to the university timetable.



Figure 35 Chinese middle school students taking a siesta (Pertoso, 2015)

Time afforded for preparation, for a seminar interaction, for presenting an opinion during a seminar interaction and for submission of written work were all seen as sensitive.

Some student participants lamented that a tutor had provided only a day to prepare for seminars, some tutors lamented that students did not seem to prepare for seminars even when expectations of preparation and materials were provided several weeks prior to the interaction.

Opinion was also divided over time available for discussion during seminars, prior to presenting. Often, the value of sharing opinion was not recognised and so *“one student’s opinion [was] taken as the group’s opinion, following which, [they] would discuss unrelated topics, like music and film stars”*.

When it came to time afforded to the preparation of coursework, this was initially seen as too short, by student groups, but when these groups discussed the issue in greater depth, the problem was seen to be in delay in engaging with the project, rather than an overall lack of time. This view was also upheld in the reflections made by students in their coursework (5.6.2) and this reflection coupled with the SEM feedback led to a greater focus on project management in subsequent lecture and group project design.

#### **5.4.3.2.7. Expectation setting**

An argument that, by making it clear what was expected of students and tutors in seminars, both sets of expectation might be better aligned, was presented at the earliest stages in the research.

The induction strategy implemented in the first year programme does not seem to have been successful. To explain the position (in 2015), there follows a reflection, taken with permission from a second year student group paper, which summarises a number of themes relating to this area:

*"In the University of Nottingham Ningbo China, education methods are different from the traditional Chinese universities. The latter ones tend to use typical Chinese teaching methods within which teachers attempt to teach all of the knowledge in class and students only need to memorize all the content along with some after-class practices provided by teachers with answers. However, in UNNC, tutors have a completely different method. For each teaching module, besides the lectures which provide general knowledge, there are also some seminars during which students are encouraged to discuss and find the solutions by their own thinking. After class, students are supposed to conduct further study rather than doing homework only. Even though there might be practices provided by tutors, they come with no exact answers and encourage creative and critical thinking. It is very necessary for students to adapt a reasonable self-study and discussion method for them to obtain more useful knowledge and higher marks of coursework under such study conditions.*

*The differences between two kinds of education methods raise problems for many Chinese students due to a lack of group work and self-study ability. It might be hard for Chinese students to adapt quickly for they have been using traditional educational methods for years. Therefore, many students might ignore the significance of group work discussion and miss appropriate opportunities to exchange thoughts with others, from which students could have gained more than depending on class only. However, some Chinese students still do not pay enough attention to it, thinking group discussion merely connects with score or tutors' requirement. Consequently, they might not experience the learning process which truly benefits them, more than a simple answer. Thus, the problem is the method of discussion and group work is ineffective for many students now.*

*Additionally, another problem about self-study is that students might forget some of their tasks and missions such as different tasks to do including preparing for next seminar or further readings after class. Even worse, some students might absent from lectures due to their forgetfulness and laziness. Therefore, lectures and seminars may not have beneficial effects they should have for students. Besides, some of the students will procrastinate and start to work on assignments only a few days before the deadlines. Therefore time and task management would be another part in the self-study problem."*

These perceptions and concerns echo clearly through this research. The way that students value the interaction in seminars and indeed the evaluation of tutor practice, where definitive answers are not given, is perhaps dependent on the adjustment of these expectations and the adoption of such *"reasonable self-study and discussion method[s]"*.

### 5.4.3.3. Performance

**Definition:** The way in which students and tutors interact during group based teaching and learning interactions.

#### 5.4.3.3.1. Introduction

Three broad areas emerge from the discussions relating to performance themes, the nature of the interaction, the nature of the topics addressed in those interactions and the nature of the people participating in them.

#### 5.4.3.3.2. Nature of the topic

Understanding the relationship between a set problem and the desired learning outcomes - *"Why this problem?"* was difficult for some students to appreciate- *"Teachers must define the purpose of the course clearly"*, until the interaction was completed and, in some cases, this relationship still seemed not to have been understood. An example of this was where students, who held to the belief that accounting was about keeping track of money, could therefore not see why accounting for time was a relevant accounting process.

Not all students were able to realise that time would be chargeable to a client, and so make a connection – this had to be explained in detail before the connection could be made. As a tutor, it was rewarding to see 'the light-bulb turn on' when a student participant suddenly realised that his group project had provided a solution to the problem he had experienced as an accounting intern, where he had been required to record his chargeable time during audit of a client. Regrettably, this enlightenment did not occur until after the completion of the project and the emotion as this realisation dawned was evident. Others, were able to make an argument of a connection between water consumption and study performance and to see this as a transaction for which they might account. Thus a clear explanation of the reason why students are learning a topic and how it related to practice was seen as necessary – *"teachers, [...] maybe they need to prepare a more charming*

*more clear ppt or something else" - "Topic needs to be clear in order to let the students all understand".*

Familiarity with the topic of discussion was seen as important as a precursor to useful group conversation and debate, yet this was seen as a two-edged sword, since overfamiliarity – repetition of a topic was seen negatively as 'boring'.

*"If the topic is hard but very, very, interesting I think the students will still study. But if it's something like really, really, boring [...] like, um activity based costing..."*

In addition to the topic itself, student participants recognised the importance of how the topic was presented to them by the tutor. For some the relevance of the topic was not apparent until after the teaching and learning interaction making the motivation prior to the activity low. The way the topic was 'formatted'/'styled' and 'framed' were important – how does it relate to the lectures or the exams was often asked, as was how might this be useful in practice.

Setting the problem/task within a context to which the student could relate enable sense-making of the general topic area and of the discussion questions then set. Students said they found case studies useful since they came with a contextual setting, but they also then raised issues of being unfamiliar with the context, so while they might be able to imagine the scenario, resolving the decisions that might be made within that context was beyond them, so they looked to the tutor for the correct answer – what should we do in this case?

By way of a clear example from 2014, in specific small group teaching and learning interaction, tutors, including the researcher, found it challenging to present a case study to groups of undergraduate students, where the case related to a Canadian company offering kitchen utensils, dinner party advice and cooking lessons. The case was particularly challenging since among the students, none cooked, had kitchens or had ever hosted a dinner party. But then the same might

be said of any industry of which the participant in a case study discussion had no familiarity with a similar context.

#### **5.4.3.3.3. Nature of the participants**

Often, focus group participants discussed the individual characteristics of the participants in their various T&L interactions, giving examples of the behaviour of **other** students, or putting forward suggestions to explain the behaviour of **other** people. It was interesting to note that it was rare for a student to discuss their own behaviour, or of influences on their own decisions, with the exception of some health issues, or those who had experienced education styles outside of China.

One of the most frequently discussed aspect of individual behaviour was that of cultural norms, particularly in respect of difference between China and other nations. Different cultural values were seen to lead to misunderstandings and different interpretations between individuals in group settings. These differences being seen as either national cultural difference or difference in education practice to which students had become accustomed. The organisational teaching and learning culture of the University was seen to be one which embraced the 'British approach' more than the 'Chinese approach', but no one explained what was meant by this, other than a need for students to take responsibility for their own learning.

Awareness of cultural difference was seen as valuable in group discussion, but fear of causing offense due to cultural difference, in groups with multiple cultured members, was seen as an inhibitor, as much so, for some, as was language skill.

Chinese students were often seen to place the blame for non-communicative behaviour on Chinese cultural norms. From the other side of the table, a non-Chinese student stated that she embraced such cultural difference and that she *"would love to know what Chinese students think"*.

Beyond national cultural characteristics, individual characteristics that influenced group activities were generally related to the willingness to express /

share and discuss ideas with other group members, since discussing this was seen as the main purpose of the interaction.

Within the group, ways of working together – a group dynamic - appeared to develop naturally, as people adopted roles that suited their individual characteristics and preferences. The first mover in a group discussion, perhaps the person most activated, the person least tolerant of silence or least afraid of being '*the special one*', would help to break the ice and get the ball rolling in terms of communication among the group members. However, it was noticeable that until either a strong leadership role was taken or an ice-breaking moment – often in the form of an event causing laughter, the conversation did not kick-off.

The role of the leader in the development of a group dynamic was discussed on several occasions and most particularly in respect of aggressive leadership, which was seen to lead to poor group dynamics and resentment among those who therefore did not present their own ideas or who lost face through the rejection of an idea. 'Good' leadership was seen as good coordination and the developer of a process of working together, much like the setting of project problems, the setting of rules of engagement in the process of discussion or the process of completion of the activity in which the group were engaged. This idea of coordination and leadership were, to a large extent, overlapping, although in some groups 2 separate people emerged with these separate roles, the 'leader' in those cases simply summarising the position, and deciding when it was time to move to the next discussion, as determined by the coordinator.

Greatest respect for influencing participant opinion as a result of discussions was afforded to those who took the role of idea generator or contributor to the discussion – a 'willingness to share ideas', and the individual characteristics of these role players was seen as 'creativity', the 'confidence' to express themselves freely and 'studious' through demonstrating their preparation for a given discussion. It was seen by some to be 'progressive' to be willing 'to take risk of being "wrong"'.

Respect was also earned by those more active, culturally awareness and experienced – referring perhaps to a hierarchical perception discussed below.

The role of 'listener' was generally seen as the lowest contributor – despite the negative sentiments expressed towards poor leadership. Listeners were regarded by some as lazy or slow but a contrasting view, perhaps reflecting Confucian teachings, respecting reflection and listening preference as a reasonable cause for non-contribution to a conversation.

Sometimes, those with low contributions to the discussion were seen to provide value in a small number of contributions and were termed 'Evaluators' (of other/ own opinion). Evaluator comments were seen to have "*made me think*". The perceived value of comments made by a group member made a telling difference in how someone who contributed to a discussion was evaluated by their peers. Self-evaluation of the worth of an individual's own knowledge or idea was also seen as important, since their willingness to contribute '*depends on the self-judgement of the speaker [and] how [...] he or she value[s the] useful[ness of their] information*'.

'Mood setter's generally played multiple roles, and positive mood setters were labelled with terms like 'Enthusiasm', 'Friendly', 'Compromise', 'Easy going', 'Motivation', 'Patience', 'Professionalism', 'Quality', 'Quick', 'Sensitivity', 'Willing to learn from others', 'Studious', 'Supportive' or 'Humorous' – with "good humour shared amongst all members". However, humour was seen as potentially problematic in mixed culture settings, since 'it could be that humour does not carry across cultural boundaries'. Negative mood setters were labelled simply with terms like 'Not interested', 'Aggressive', 'Selfish' or simply 'Tired'.

The perception of a natural hierarchy among participants was something anticipated in the study, yet seldom discussed in focus groups. However there was some feedback on "*perceiving the environment as unsafe [due to] power difference*" and occasionally a joke about student behaviour would occur, like 'Why



would he care, he's rich!', or 'connected'. More respect was afforded to those older or with more experience. This view of age hierarchy was discussed more in groups containing a mix of UG/PG/Tutor participants, rather than in homogenous groups, perhaps reflecting an influence arising from the choice of focus group participants.

As was anticipated, a high level of hierarchical power was also recognised in the person who had been assigned the digital pen for note taking in focus groups.

A master's student who had experienced undergraduate study in the USA remarked on the difference of the group dynamic in that environment. Where a broad set of international cultures were mixed together in one discussion group, he noted that the USA students *"always [...] over participated. We don't have a chance to say anything! They always quick, just respond very quickly"*. However, *"I always convert English to Chinese I think and consider it in Chinese and I translate in English, [so] I don't think it's really [...] matter[s] about the culture thing [...] because I am [...] waiting to speak out but [...] I have this limitation of my [...] language ability"*.

Concerns over language ability, as noted in other chapters, was of significant concern among students, indeed fear of saying something technically wrong was apparently trumped by being unable to express the idea correctly in English.

While not expressing the view in the focus group conversation, some participants reflected late in their questionnaires that they were not pre-disposed to small group interactions requiring face-to-face discussions 'I find out why I always failed in group [interactions]. But it's hard for me to change because I am the people listen first then talk'. Some interesting comments were made relating to the group dynamic and coercion themes when participants reflected on the learning outcome from the focus group 'I started to notice how people influence others' and 'I know more about how to make members communicat[e]'

Having a familiarity with both the process of seminar interactions and of working together in group-based activity were valued individual experiences, although a participant's knowledge of the topic of conversation, if arising through academic study, was respected. Curiously, academic experience was generally perceived as more reliable and relevant to the group discussion than practical experience, for instance, that gained through internship.

Lectures covered aspects of project management, teamwork and decision-making along with the identification of useful sources of evidence in forming an argument in support of system design decisions. However, the process of making a group decision, achieving a consensus of opinion, was left to the student's own devices. One source of evidence favoured by many groups, was the opinion of previous year students, yet few students took the opportunity to express their advice in online feedback forums aimed directly as a communications link to the following year's students.

#### **5.4.3.3.4. Nature of the interaction**

Within this area three phases of the interaction were identified through the researcher's analysis: the Problem setting, Problem solving and Presentation of group findings. Within these three interaction phases, 2 main types of interaction were identified: Student-Tutor and Student-Student. In this section these three phases are presented, exploring these two interaction types.

The communication and understanding of the requirements, or expectation, of both seminars and projects has been mentioned in previous themes. In this theme the struggle that students engage in, when seeking to understand or make sense of each problem, is explored.

The principal student focus seems to lie consistently on understanding two aspects: "What does the tutor want?" and "What is the tutor's answer?" This focus is maintained by some students throughout the module/project, until time

pressures force independent action/decisions. During this time, frustrations can mount.

"What is the most important part?" - In order to cope with this focus, tutors often identified repeating question themes and discuss/explain them further in lecture or other communication fora. If the tutor does not at this time offer their view or answer, students identify this theme as "*more important*" and will seek further consultation with the tutor to try to understand what the tutor's answer to the problem might be.

These consultations either take the form of email, office hour meetings or informal conversations with the tutor following teaching and learning interactions. The word often used to describe the student or group's mental state is confusion. Yet, generally, when asked to summarise the problem(s) identified, the student seems quite clear on the options available. So often the confusion may be seen as a problem in decision-making and/or confidence. For example, one student asked the question "*Which student activity should we choose to explore?*" and, following discussion, this turned out to indicate that the student understood the project requirements, but wished to explore the tutor's preference.

Notes of these interactions are compared, both in discussion and in online fora, as different students develop new insights into what the tutor might think about the topic 'latched' on to.

Such tutor focus may result from a desire to score a higher mark by pleasing the tutor – meeting their preference or, as one participant put it, a "*Fear of making [a] mistake*". [*A lack of*] "*confidence, I think that is*". This was echoed by another saying "*So if you are not confident you are afraid that your ideas are wrong and bad*". Thus the motivation behind this phenomenon seems predominantly to be through fear of mistakes or misunderstanding and "getting it wrong", so it is unfortunate that it is only once these initial independent decision are made that, in many cases, the desired learning outcomes of the module are addressed.

Another aspect of this coping with 'confusion' is on a more practical level, to alter the nature of the teaching and learning interactions:

*"[T]he teacher, he didn't know how to make student[s] communicate and the rest of the seminar he been just talking by himself, explaining and answering the questions by himself".*

Many student fora focus on module or project topics but, in some, the nature of the tutor is discussed, including which tutors are more susceptible to pressure than others.

*"We share about which tutors can be made to teach us the way we like".*

Also shared are perceptions of what a tutor's general preferences are, which are strict on English language use and what areas they are more knowledgeable about. Such fora would seem to be maintained from year to year which, coupled with the sharing of model (high scoring) coursework from previous year projects, may be seen as a useful resource of shared information about tutor expectations and characteristics, between successive years of students.

The issue of communicating and identifying problems was identified in many contexts. The key aspects of 'understanding' were the need for good communication from the tutor providing a clear explanation - which sometimes related to clear voice projection in verbal instruction and often a requirement for repetition and examples, and good communication between group members - to establish a shared objective.

Students often expressed concern that, in some modules, the theoretical nature of the topic were covered in depth but that learning interactions needed to link these theoretical insights with practical instruction and activity and, as such, the tools that might be used needed more focus in their practical application. This was taken as a positive comment on the nature of the AIS module being used for the research, which had a strong practical side.

Rule setting was highlighted as an issue, with students wishing to know the boundaries of the project – although these were explained in each brief, students were unsure how far their own opinion/creativity might be extended. “*Can we use Chinese sources?*” became a frequent question, until it was emphasised that students should use all their available skills and that multi-lingual abilities provided them with a competitive advantage, so long as the quality of the sources used, as with all sources, was ensured.

Defining the scope/context of projects and topics was also seen as problematic from the perspective of tutors. Some seeing the tight definition of topics to constitute ‘spoon-feeding’ information to the students while the role of the tutor was to open the door to knowledge, not to show a room limiting the boundaries that might be explored.

The setting of contexts was seen as important by both tutors and students as was understanding the marking criteria for each form of assessment. Early on in the research, students were frequently found not to have familiarised themselves with the standard marking criteria used across the Business School but, towards the end of the study, it was noticeable that students had become familiar with this.

The setting of a context with which students were familiar enough to explore case study examples was a potential minefield for undergraduate students.

Having understood the nature of the problem, the approach to solving it became the focus of attention. In this research the initial research problem varied but was generally the development of an alignment strategy in designing a system to solve an information need relating to student activity resulting in measurable transactions during their projects.

The major influencing themes to emerge from this area were seen as the characteristics of each individual, the way they worked together as a group to make

decisions and the way tutors interacted with students both during and following the student interaction.

Ideally, it was argued that *"students should both ask and answer questions"*, but various reasons for this not being the case in seminar interactions emerged, including language, where a student's *"English is not good enough to express/explain it more clearly"*. Unusually, personal fault was found in this respect but coping responses to overcome this obstacle were also put forward - *"Maybe my speaking English is not good enough, but I try to use many ways to express myself"* – using English *"at different level of communication skills, we try to make each-other understand"*.

Tutors seemed divided on the issue of English use in seminars: some recognised that seminars were one of the most important interactions in developing critical argument in a second language, while others recognised that the desired learning outcomes did not relate so much to the language used, as to the content of the module and as such allowed other languages could be used for discussion, as long as the language of presentation was English.

Some groups had trouble overcoming language differences, which in worse case scenarios, lead to a total breakdown in group dynamic, such that members became excluded from group decision-making processes. Such cases came to light when, in seminar, non-Chinese speaking students might complain that they were unable to take part in the group conversation and, in group projects, sadly towards the end of the project when there was no time to resolve issues to everyone's benefit, groups would make applications for uneven marking. The reasons for these breakdowns, which were fortunately not too frequent, were varied. They generally arose from communication or cultural differences. The learning derived from these breakdowns, as noted by students in their reflections on the process, was probably of as much value to all those concerned, as the main desired learning outcomes of the project.

Perception of the value of communicating with other students varied. Having all participated in the same education system, Chinese students tended to take the view that *"we all think alike"*, *"we all share the same opinion"* and yet in later academic years one remarked *"Why we are different from our friends in almost everything?"*.

So it was that, despite the assertions made that products of the Chinese high school education system were all the same, a key factor influencing student to student interaction was identified as being the 'individual characteristics' of each student.

Having understood the initial problem, or having identified a new problem, students were often still seen to turn back to the tutor to ask the question *"What should we do now?"* This proactive approach by the student was seen to reflect a view or "expectation that tutors have an answer for student questions" - *"Can answer our question"*. Tutors saw the need for "Multi-level interaction between and among instructor and students" with less focus on the tutor as the "fountain of knowledge". The importance of setting the tone, this "atmosphere of the interaction between students and tutors" in the initial T&L interactions, was seen as vital.

Student empowerment was seen as an important part of this process - *"[Tutors should] promote the freedom to express [...] opinions. [...] They help us to volunteer, er, to be willing to express ourselves"*, to value their own views and to recognise that they are worth sharing. Unfortunately, inconsistency in the approach was noted - *"I think when we graduate to year 2 and year 3 teachers suppose that we know the importance of communication, so they don't really emphasise the idea"*. Such inconsistencies might be addressed with better coordinated tutor induction processes, as discussed in section 5.5.2.

As with focus groups aimed at achieving a more naturalistic discussion where participants *"should all be able to act naturally but they were all aware of the cameras and us – the observers"* when a tutor is in the room, students perform

differently. So whether or not the tutor is actively intervening in group conversations, there is an inevitable impact, of their presence, on these discussions.

One aspect of intervention is 'encouragement', where tutors seek to "*encourage participation by others*" but, as when a facilitator in a self-regulated focus group discussion steps in to intercede in the group's discussion, it takes time for the group dynamic to return to the previous status quo, following the intervention – particularly if a language switch is involved – so it takes time for the group to get back into the swing of the discussion.

Taking the view that group discussions are "*socially constructed interactions*", the theme of coercion – pressuring students to participate in a given activity, or for tutors to teach in a preferred way, cropped up in several conversations including in those relating to preparation. When a tutor participant, discussing the theme with a group of students, asked "*So you think if we **make** [students] prepare, then possibly the response time will be improved*", the students concurred that this was the case. Whether this agreement was reached because a tutor asked this question, or whether that was their perception, was not probed further.

Reflecting on their experience in class, one student suggested a need for tutor intervention as an encouragement for student '*activeness*' in classroom settings as follows: "*[T]eachers [should] try to... encourage students to communicate with them and try to set a ... relaxing environment. Not too aggressive, not harsh on students*".

In other groups, the sensitivity of tutors to this theme was explored by tutors, who saw coercion as a negative (reflecting a sense of failure in design) but commonly required practice, in order to assist students in reaching a desired learning objective. In mixed groups of students and tutors, the conclusion reached was that coercion or encouragement was one of the roles of the tutor, particularly where group dynamic had broken down so that objectives could/had not been



reached. The former view seeing coercion as the symptom of bad interaction design or poor attitude/motivation among students, the latter as a normal part of tutor intervention and so a part of interaction design.

Following student discussions or activities of pre-determined duration during a seminar, a student group would typically be asked to present their ideas to the class. Sometimes, these presentations were made using MS PowerPoint slides, sometimes verbally or through presenting documentation prepared by the group during their activity, as was the case in seminars with a mapping focus. In group projects, these presentations were in the form of reports or in online communities, with the presentation of researched sources, questions and answers.

Critical thinking was seen as being of paramount importance in presentation, and the importance of this aspect of the presentation of an argument, no matter how a group's findings were presented, was repeatedly emphasised.

The process of reaching a group decision, often dictated by the '*Leader*' or '*Coordinator*', varied significantly. Some groups relying on the decision-making of an individual, others assigning decision-making powers to individuals and some opting to vote for each decision-point identified.

Different opinions were valued since, "*if we have more different ideas which we can use to argue with each other*", then a more creative and critical understanding can be reached. However, deciding which option or idea to invest in proved difficult.

Students saw themselves as inefficient in making-decisions and although tools like point-scoring matrices were introduced as part of the taught content, group decision-making continued to provide an obstacle to group progress. As discussed above, the fall-back position for many groups was to turn to the tutor, or in some cases to previous year students, to make decisions for the group.

In later projects, a requirement to include reflection on the processes in which the group had engaged while completing the project led to further revelations about

the frustrations experienced in making such decisions, even when the tutor had advised the group that the options being considered were all valid, this sticking point lead to the delay of progress in other aspects of the group's project.

In the 2014/15 iteration, a staged submission of the Initial Project Plan was designed to require groups to make some decisions under a more rigid time pressure. For most groups this helped to settle them down in their project, however for 3 groups, internal group politics seemed to lead to decision-making problems 2-3 weeks following the first stage submission date.

#### **5.4.3.4. Evaluation**

**Definition:** Reflection upon and value perceived to arise from the teaching and learning interaction.

##### **5.4.3.4.1. Introduction**

The formalised evaluation of student and tutor performance is made in several ways. Students are evaluated in the group work submitted in accordance with the marking criteria applied across the business school (Appendix G), online community activity and, in some modules, seminar activity. Tutors are evaluated in Student Evaluation of Teaching feedback questionnaires, and the module design is evaluated by students in Student Evaluation of Module questionnaires. In the following section however, the focus is on the evaluation students made of the existing evaluation processes.

##### **5.4.3.4.2. Seminars evaluation**

Students often asked why they were not evaluated on their activity in the module seminars, since such 'grading' was considered a beneficial source of motivation. This had recently started to happen in some other modules and feedback at the time included – '*make most courses scored participation*'. The conversation later developed into an examination of the fairness of such seminar evaluations and the tide of popular student opinion now seems to be against such assessment, although the practice still continues.

Several students commented that they enjoyed the format of the research focus group, more than that of the typical seminar, due to their familiarity with the subject matter and the discovery of difference of opinion where they thought no such difference existed. This lead in turn to the discussion of topic choices in seminars and the need to consider discussion duration and making the choice of topic / activity in some modules more stimulating.

#### **5.4.3.4.3. Online activity evaluation**

No negative remarks were made about the grading of contributions made to the AIS module online project-focussed bulletin board discussion groups, although some argued for greater reward for early contributions, since the information was more valuable as a result of such early contribution.

#### **5.4.3.4.4. Project evaluation**

No remarks were made about the evaluation of group projects, perhaps because, at the time of each data collection, no student had yet been evaluated in this way and also because the module outline, as with all module outlines, clarified the method of assessment (Appendix L). However, there was a keen interest to know what aspects of the group project might also feature in that year's exam.

#### **5.4.3.5. Reflection on researcher analysis**

Early on in the research it was noted that participants' own perception of their performance in the focus group discussions sometimes did not tie in with their observed performance, for example 'I'm sorry, I messed up your research there' (Note 1 FG02 Participant 1), where a participating tutor felt they had taken on the tutor role in leading the focus group discussion. However it was possible to see that another participant had controlled the interaction through body language, nodding, eye contact and pointing, to lead the interaction throughout. Since action research is more about what people do, than on what they say they do (Heinze, 2008), it was valuable to have both video and transcribed audio of the interactions when

examining performance and determining the influence of themes, such as a perceived hierarchy.

#### **5.4.4. Reflection on GI phase analysis**

In this research, the participant analysis occurred during data collection and therefore prior to the researcher's analysis. Writing up of the participant analysis also occurred prior to the research analysis write-up. While the researcher might like to think that contamination of the latter analysis by his involvement in the prior analysis did not happen, such possibility must be recognised. However, by designing the analytical process in this way, and prior to discussion, with reference to the literature relating to the themes identified by the participants, an effort is made to avoid the development of preconceptions. Clearly this was not appropriate in the development of the research methods, as discussed in that section (4). By taking this approach, separating the theme research in the literature from the theme discovery through primary data collection, it is felt that the themes have been allowed to emerge from the data with a minimum of contamination by the researcher.

While not all participants were able to agree with the importance/ranking of each theme identified or perhaps with the relationships between these themes, when discussed in the group setting, perhaps the key here is recognising that any theme identified in this phase was seen as important enough, by at least one participant, to be worthy of discussion and therefore may prove worthy of further research. However, with limited resources a pragmatic decision needs to be taken at some stage as to how much detail each theme can be afforded.

Following these two analyses, confirmation feedback from participants and presenting at an internal conference of the findings of the GI phase of the research, a sufficient understanding of the phenomena involved was seen to have been gained, to identify the problems perceived in the process and to form a foundation of an answer to the first research question - What influences engagement in small collaborative groups?

The next stage was to consider strategy development.



## 5.5. Strategy Development Phase

### 5.5.1. Introduction

Strategy development may be regarded as the design process of the teaching and learning interaction, the purpose of which is to alter the following interaction, based upon the feedback and evaluation of the previous cycle.

During the GI phase of inquiry, many themes emerged that were identified by participants as '*problems in the process*'. These factors were seen to relate both to specific decision-makers / designers and to processes prior to, during and following the small group interactions in which the participants were engaged.

In the SD phase, the mode of inquiry required that focus group activities address the problems identified and defined in the GI phase. It should be noted that while these phases are clearly defined in this thesis, often, when defining problems for the GI phase, participants would also mention experience of or recommendations for strategies for resolving these same problems (SD phase) and that such conversations developed both in GI and SD phase focus groups. For those problems where a specific design change was proposed, the following section describes those changes.

The following section is structured first to discuss University (campus) and school level strategies, then to those areas where the researcher has direct control, through the design of teaching and learning interactions.

In these latter areas, the problems to be tackled in the SD phase fell broadly into two inter-related camps: those relating to the design of the **interactions** and those relating to the design of the **tasks** in which participants were engaged during those interactions.

### 5.5.2. University level induction strategies

Conducted during the first few weeks of each academic year, there have always been induction processes at the University, with the involvement of the First Year

Office administration, student organisations such as the Young Volunteers Association and the information services from the library and IT teams.

For staff, the induction activities provided in the first week or so of the first semester of each academic year, prior to engaging in teaching, include a briefing by the Provost, the Chair of the Campus Teaching Committee and presentations/Q&A's from key services/leaders.

This induction process continues at the School levels where, for new tutors, colleagues and mentors are assigned or found to help, support them in their early stage acclimatisation. In addition, at a school level, presentations at meeting, by school level Teaching and Learning Committee members and other related roles, bring old and new members of the teaching staff up to date with expectations and developments for the coming semester.

*'With University and School inductions combined, the University offers a comprehensive on-site induction for all new staff. The main intake being in September with a shorter induction taking place at the mid-year point. We review after each induction and in the summer period to ensure we are meeting expectations and supporting staff who join us on campus.'*

U.N.N.C. (2016)

This review process is important, although a feedback loop influencing the review of these processes does not appear to have been formalised.

In addition, an Induction SharePoint page is provided with links to the UNNC Teaching and Learning Committee pages, the resources that relate to practical advice of which then link back to the UoN UK campus web-pages. Thus the various teaching and learning resources accessible are relevant to a similar but different context.

*'We have Chinese students here too, you know'.*

Anon UK Tutor (2014)

For students, there are both induction processes and student handbooks which are differentiated between undergraduate and postgraduate students.



The purpose of the preliminary year of education at UNNC might also be seen as a preparation period to ensure students adjust to the learning culture and processes in place at the University both in terms of language capabilities – the main focus of the year – and in setting expectations.

What Chinese students might expect from a teaching and learning interaction and what a British university tutor might expect seem generally poorly aligned. This problem is one recognised in UK contexts involving Chinese students and is often perceived as a reluctance to interact in small groups (Edwards and Ran (2006)). This student-tutor expectation gap is often regarded as a difference between Socratic and Confucian philosophies of teaching (e.g. Ma (2011)). These differences influence not only the perception of the student-teacher relationship but also the preferred learning style (Edwards and Ran (2006)).

As a result, a general lack of preparation for seminars means that students are unable to engage in the discursive processes which are the intended interaction in typical UNNC seminar design. A wide-spread perception among Chinese students is that seminars are a teaching interaction rather than a tutor led forum to discuss and exchange ideas. It soon became clear in this research that this was an expectation gap between tutors and students. Tutors were designing seminars for prepared learners to discuss, and students were attending seminars expecting to be taught – a recipe for disaster. It was also clear that this was a problem that went far beyond the AIS module.

Collecting data about this phenomenon was not hard to achieve: be they tutor or student, Chinese or not, everyone wanted to talk about it. Even if it was not the current topic, it would be brought up in the conversation and the debate was usually animated and emotional. Due to an apparently wide expectation gap, strategies proposed were conflicting and diverse. Due to the inherent emotion involved and the importance of this theme, theme identification and strategy proposal often came hand in hand.

### 5.5.3. Interaction design

In general, strategies to address the themes identified as part of the design of small group interactions were addressed in focus groups that asked participants to rank and map relationships between factors.

For some themes, specific activities were designed to address specific themes. The following addresses the themes for which specific data collection approaches were designed.

#### 5.5.3.1. Classroom layout

*'...perhaps circles without desks, either way not in lines facing a board'*

A focus group activity was designed in which respondents worked collaboratively to agree a single layout for a classroom designed for this purpose. The resulting map (Figure 36) provides space for 4 groups of 5 students to work at PCs, the

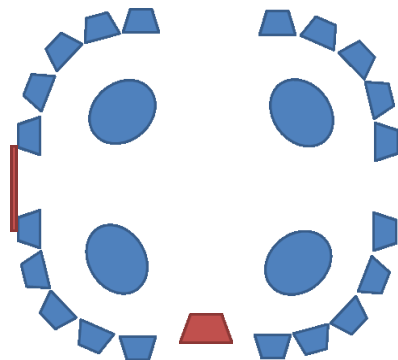


Figure 36 Computer lab layout enabling discursive interactions

screens of which are visible to the whole group. The seating is wheeled swivel chairs enabling students to turn away from the PCs and focus either on group discussion or one of the two projection screens that are positioned to enable every person to see comfortably. A separate teaching PC is included as is a space for tutors to move around the room both when presenting and when observing. The shared group working spaces (wheeled tables) can then be moved centrally to provide a smaller class discussion environment.

### 5.5.3.2. Timetable

Focus groups tasked with causal mapping often reflected on timetabling issues, the timing of lectures and seminars in relation to meals and the spaces between them. Focus group questions about “spaces” during longer lecture interactions also provided feedback on this strategy. Data and evidence was also collected through student group projects in which the research focus was accounting for rest between and during academic interactions.

Levels of concentration and participation in group tasks, was seen to be affected by the timing, frequency and duration of learning interactions. Certainly the researcher’s experience as student, tutor and in other workplace contexts, would seem to indicate that audiences are sleepy following meals and more anxious to leave when hungry or tired. But the duration and rest space between learning interactions as well as their timing was seen as significant by participants.

### 5.5.3.3. Social aspects

*‘You work really hard to get the response in the whole group situation and then you’ve got a whole string of people waiting outside your door’*

Edwards and Ran (2006)

This theme of the “Social aspects” of small group interactions represents a complex composite of many different expressions of perceived problems or inhibitors. It emerged that students found it awkward and were not accustomed to expressing their views to so many people/strangers in conversation - *“I feel embarrassed to talk in front of strangers”*. Some were more comfortable or experienced in doing so in one-to-one, one-to-two or non-face-to-face communication in bulletin boards or emails. They were also more comfortable communicating in anonymous forums although, without motivation, such communication proved sparse.

Several approaches to collecting data about strategies relating to this theme emerged from the academic/practitioner literature and practitioner experience such approaches included the use of bulletin boards, anonymous bulletin boards, credit

bearing bulletin boards, group credit bearing bulletin boards, active class participation, ice-breakers, 'quesdiscussion' (A discussion strategy where only questions may be asked. See section 6.3.11.5 for further information), group emails, presentation, group presentation and student reflections on their own facilitation of small group interactions.

Group composition was a common theme expressed by students both in focus groups and in SET/SEM feedback. Some students felt strongly that they should be allowed to select their group members. This was most particularly a problem theme identified in the early cycles of this project. Upon closer investigation it transpired that in the first year of their studies, student classes had always been assigned based upon the students' unique ID number. Students had therefore become used to working in the same classes and in the same groups in those classes.

As a business practitioner, the researcher's experience has been that, in the workplace, colleagues needed to work with people of all types, as assigned by necessity or management. Learning to collaborate in diverse groups and with "strangers" would therefore be an advantageous skill to acquire at a business school. Any action available to promote group diversity might therefore be considered of value. Timetabling was asked to randomise group allocation for all seminars for the module and this view of the importance of learning to develop new working relationships was presented as part of the introductory lecture for the module. The following text was also added to the module outline, part of which was inherited from the previous convenor:

*"There will normally be 3 groups in a class and students will be advised of their group members before or during their first seminar. These allocations are set by the convenor using the RAND() function in MS Excel. We do not have a choice of colleagues in practice and, in the same way, these group allocations are not negotiable. Organising a group and working effectively within the same is not always easy. However, it is still something that you have to learn and one of the key skills being assessed within this project. Remember that good managers are those that most successfully practice the art of getting work done through people".*

The argument seems to have been taken well since, following this change to the outline and the presentation of the argument, few students have presented the view in their SET/SEMs.

Data collected about the role of gender in the social aspects of group design seems contradictory. Some participants arguing that it was an important aspect for some time in a group discussion would then back-pedal to conform to the opposite argument of other group members. Even when interviewed later about this aspect of the conversation, participants would conform to the group view. Perhaps gender difference is a taboo, or sensitivity to it is seen as a personal inadequacy where they find themselves unable to overcome their “*shy*” feelings. So perhaps no surprise there and another argument for diversity in group structure to acclimatise students to inter-gender communication.

Aspects of hierarchy and the perception of hierarchy, as reflected in the literature review, were seen to impact strongly in seminar interactions, particularly for Chinese students.

By adopting strategies in focus groups, such as pen-spinning (where the spin of the pen determines who will contribute next), pen-passing (where the pen is passed around the group members as determined by the last contributor), simple turn-taking and the allocation of duties such as note taking, group representation in mapping, presenting etc., the impact of hierarchy could be altered.

At this stage it is worth recognising that perceived or pre-existing hierarchies are not necessarily a bad thing as a group of people develop a group dynamic or working relationship: they can accelerate a group discussion in to an animated and useful learning tool. It is therefore important to recognise the role of the tutor in determining positive and negative group dynamics to decide whether or how to intervene.

Tutors engaging in conversation mapping and the identification of minor problems in communication in seminars would seem impractical, with 3 or 4 such conversations taking place concurrently, in any given class. However, in cases of breakdown in group dynamic, such as conversational free-riding, or linguistic exclusion, such interventions were seen as useful by all concerned.

Student strategies, rather than tutor strategies, for addressing (as opposed to coping with) a perceived imbalance in seminar participation, did not emerge from this phase of the research. However, these represent some of the desired learning outcomes of the AIS module (e.g. learning to work in a group). In the AR Phase, where students were exposed to the findings of the SD phase and elements of this study to enable them to appreciate their context, student groups were occasionally heard to remark on their group dynamic during seminar and to identify behavioural coping strategies among their group members, primarily as a source of humour, but effectively nudging each other to participate.

#### **5.5.3.4. Language**

Students recognised that they needed to adjust to different accents and from one of the few pieces of research conducted into the phenomenon in this context, Waters (2007) reflects on strategies proposed from the student perception for developing linguistic ability in order to interact using a second language. *"Many students asked for more opportunities for speaking practice and for more reading, listening and study materials at an appropriate level and related with learning outcomes"*.

A colleague from the linguistic department commented that, compared to the issues encountered in NUBS in China seminars, *"Language Seminars are fine. We do not have the same issues"*. Many students are engaged in both of these processes, since linguistic studies for a third language are an optional component for some of the major NUBS in China degree programmes. So different problems faced by the same students in different contexts. In one context, the language used

was the focus of study, whereas in the other the language was the tool used to communicate about the focus of study.

Awkwardness in social interaction was only further exacerbated by the requirement to communicate in English as a second language – indeed students with a better command of the language were recognised to be conversation dominators by participants in face-to-face communication and recognised as such in this research.

That students would feel uncomfortable using their second language to communicate with others who shared their first language is not surprising. As discussed in the literature review, cultural factors such as gaze and face would clearly influence this comfort zone, and yet during the course of the study some student groups agreed between themselves that, for the duration of the project, they would only use English in their group communication for the project.

Where such an agreement had been reached it was entered into in the knowledge that this would help students to improve their linguistic ability in the use of English, it was also noted that this was an expectation of the tutor in all seminars.

In order to influence groups to commit to the use of English in seminars, the tutor (researcher) would intervene in group conversations in seminar where Chinese was in use and either sit with the group for a while, suggest that students might continue to use Chinese but only if they sang or on occasion offering a sweet to the initiator of Chinese conversation, revealing that it was not to be seen as a reward, but more as a way of stopping the individual from speaking. With some groups this worked – in promoting the use of English, not the singing. In others it was less effective and, again, interventions in group dynamic, by the facilitator, inhibits the development of conversations so, after a number of attempts, policing the use of English in a seminar would be reduced.

Over the years, this approach led to a reputation as being 'strict' among students, so it seemed that other tutors were not as insistent on the use of English during seminars. This in itself might be seen as another cause of the problem, yet surely it is easier / efficient for people sharing a common language to communicate in that language. Again, learning outcomes dictate that students overcome some of the problems encountered in seminar interactions. It is worth reflecting that, where groups of students had different first languages, linguistic problems were resolved by using English, rather than being caused by the requirement to use English. Having recognised this difference through observation, wherever possible, non-Chinese speakers were mixed evenly between groups, to make the use of English seem more naturalistic. This did not always lead to resolution, indeed on occasion it was observed that non-Chinese students were isolated from conversation by Chinese students discussing in Chinese or, and more frequently, non-Chinese students would be given the floor to speak, while Chinese students remained silent.

From 2014, following debates with respected fellow tutors and pressure from feedback in SETs, I resolved to experiment with permitting first languages to be used in group discussion, as long as the presentation to the class was then made in English. This was certainly preferred by the students, but I still wonder whether the decision is doing them, and perhaps the quality of their degree, a disservice in eroding the opportunity to use English in seminars as a vehicle to practice and improve their second language.

#### **5.5.3.5. Motivation**

*"What I think is not important", "We all share the same opinion",  
"I would rather listen to what other people think", "Why am I learning this?"*

Identified as an important factor in the GI phase of the study and also linked to assessment, participants reflected that there was a lack of motivation, or that they felt unmotivated to prepare for or participate/communicate in small group activities



and in bulletin board interactions. This despite some, at the same time, recognising a link between preparation and learning outcomes from small group interactions or, in some cases between, motivation and their final degree.

In the SD phase, three questions were developed to examine motivation. The first looked at motivation to take part in the research focus group, the second looked at reasons why students are motivated to contribute to small group interactions in seminars and in the final group task, students were asked to discuss the differences between motivations and to propose strategies both for students and tutors to increase this motivation.

Feedback from some students suggested that 10% of the mark for the module should be allocated towards motivating this form of communication. Others felt that 20% would be needed, but was initially considered too significant by the tutor, based upon the overall desired learning outcomes of the module.

Based upon experience from both the researcher's previous teaching on the module and from colleagues teaching in similar contexts, in the 2012/13 cycle, bulletin board communication was motivated using group responsibility and a mark of up to 10% of the group project was awarded, on a group by group basis, depending on quality and quantity of contributions made to the online forum.

As reflected in the AR Phase analysis (5.6) 10% proved sufficient to motivate contributions to be made, but game play came into effect where groups viewed their relationship to others as competitive and were reticent to contribute at a time when such contribution would have proved useful to others. However, this perception of competition was not exhibited universally and some more 'activated' / confident students were early adopters of the forums both in terms of raising questions and responding to the questions of others.

Upon investigation, it was found that those student groups who had specifically allocated a group member, to be responsible for bulletin board communications, tended to be the early contributors.

At the same time as the AR Phase of the study was taking place, an initiative to implement active class participation (ACP) in the business school was taking place. The approach led to students taking ACP modules being assessed on their preparation before and contribution during those seminars. This may have had an impact on all modules that did not engage in ACP. The impact reflected in focus groups, by students engaged in these modules, was that preparation for other module seminars and coursework was put on hold until the ACP part of the ACP modules was complete. To what extent this impacted on the AIS module is not known, but that it had an impact seems likely.

#### **5.5.3.6. Reflection on interaction design**

Several of the themes arising from this research and identified as inhibitors of communication and collaboration in group interactions are themes that relate to aspects of the teaching and learning anticipated as learning outcomes of the module. The module catalogue states that skills acquired from engaging in the module include 'effective oral and written communication skills in a range of traditional and electronic media' and 'the interpersonal skills for effective listening, negotiating, persuasion and presentation'.

It would therefore seem that many of the themes identified in this research as inhibitors to communication and collaboration in small groups were the very skills that students were meant to be acquiring from engaging in the module activities. This emphasised the importance of developing strategies that would help students overcome, rather than avoid these inhibitors. For further reflection on this and related aspects, please refer to Appendix N.

#### **5.5.4. Task design**

The theme of task design identified in the research relates to two aspects of small group interaction. First is the design of the seminar tasks in which student groups were asked to engage. Second is the design of the group project in which students were engaged for the duration of the module.

##### **5.5.4.1. Seminar task design**

Many of the problems identified related to tasks where the 'format', 'style' and 'framing' or 'context setting' of question were not designed to promote communication between participants - *"Teachers can research about how to raise questions and relate the questions to the topic"*.

To address these questions, three focus groups – one of students, one of tutors and one composed of students and tutors were held. The focus was set as seminar design and the factors emerging from previous groups and other sources of data were provided to the group in the form of theme definition cards. The groups engaged in three activities. First, to familiarise themselves with the factors, the group were asked to agree an order of importance. Second, to draw a causal map to demonstrate the linkages between them and finally to propose and discuss strategies to address the themes identified.

Finally, behaviour in focus groups was observed and reflected on by participants in those focus groups in their post group activity questionnaire. Focus group design that appeared to work was then adopted in seminar design for related seminars.

##### **5.5.4.2. Group project design**

The initial design of the project brief, the tool developed to guide students through their AIS group project, was developed gradually during the GI and SD phases in conjunction with the literature reviewed during that same period.

Following the first iteration using the new project brief, focus groups, coursework reflection, SEM feedback and general communications with students influenced the

design of the following iterations. For details for each iteration and the reasons for each change, see section 5.6 and the appendices for a copy of each version.

## 5.5.5. Other tangible outputs

### 5.5.5.1. Tutor perceptions of T&L interactions

Following a case study seminar presented by the researcher, separate to the main study, but presented to about 50 of the NUBS in China faculty in September 2011, the resulting feedback on teaching and learning interaction experiences were summarised in a group discussion and tabulated below (Table 30) from researcher notes and whiteboards as follows:

PROPOSED REVIEWS	DETAIL
Assessment method	For both student and tutor
	Active class participation / Continuous assessment
	Avoid continuous change to methods
Environment	'Ideal' rooms suited to different teaching interactions
	Appropriate facilities provided for interactions
	Group size
T&L interactions	Hybrid interactions mixing case study with lecture
	Some PG students have enjoyed a hybrid format for case-studies
	Integration between learning interactions
	Building logical pathways and progressions
	Co-ordination of case-study workload
	Needs to be a logical continuity to use of cases along programme
	Staff motivation / incentive to change / experiment
	Case selection – should cases be used at UG level
	Course/module competition for student time
	Student / staff expectation
	Student motivation
	Student evaluation
	Student orientation
	Lack of cooperation
	Lack of preparation

Table 30 Summary of whiteboard of proposals from NUBS in China Tutors

These themes demonstrate the areas into which the tutors were devoting their resources to facilitate change. Several of these themes relate to the administration of teaching and coordination across programmes. Yet, despite the slightly different perspective, several of the themes identified in the GI phase of this study emerged here also.

### 5.5.5.2. Tutor strategies

Summarised in the following table (Table 31), tutors subsequently put forward the strategies they had adopted, in order to address these themes:

STRATEGY	PERCEIVED EFFECTIVENESS
Case study, particularly international case studies relating theory to practice – grouping students into smaller groups >> discussion >> presentation	Very interactive and effective / Very effective / Effective and good / Effective / Moderately effective / Involved about half of students / Not very effective / Case studies not a perfect match with local education culture
Class Discussion	Effective sometimes
Project group presentations with Q&A	Very effective
Motivation by credit bearing ACP (Detailed marking criteria should be developed)	Effective / Student and tutor problems with assessment methods
Ad Hoc Group Tasks / Discussions then presentation	Very effective / Effective – but depends on the teacher's ability to listen and respond / Not very effective / Students' English poor so ineffective
Individual presentations based upon individual preparation	Not so effective / Students don't like it
Inviting individual to answer (open) question with some warning but no preparation time	Quite effective
Inviting individual to answer (open) question without warning	Ineffective
Demonstrate the problem and answer (Have MCQ's in class and then follow up with asking why student answered A, B, C or D?)	Effective sometimes
Experiments (e.g. auctions) / Quizzes / Games (e.g. Monopoly / Beer game)	Received positive feedback from students / Very effective / Quite effective (when internet is working)
Field trip to the museum (students need to submit work based on this)	Effective: attended by folk who never come to formal class
Simulation – computer based	Very interactive and effective
Student led seminars, where students (teach) facilitate, observe and participate: discussions are about student content. Data collected forms foundation of group projects, which are then assessed (which forms reflection on process)	Very interactive, usually productive
Use real world examples	Useful

Table 31 Summary of tutor strategies

These strategies and perceptions of effectiveness of each approach provide useful insights into both the way UNNC small group learning interactions are being designed and into the effectiveness of them when applied in the given context(s). Contexts rather than context is perhaps more appropriate since, as recognised during the seminar, variations in perception of effectiveness depended on the specific context and skills of the person applying the strategy, making them so context specific that to generalise them, across the Business School, without consideration of contextual differences, would likely prove to be an ineffective strategy.

This having been recognised, the potential for the application of such strategies within this research project was recognised and aspects of group rather than individual preference were taken on board.

### 5.5.5.3. Post Graduate Certificate of Higher Education

In 2013 the researcher completed a teaching certification required for all teachers at the University – the Post Graduate Certificate of Higher Education (PGCHE). One part of this certification was a group project, which the researcher completed with a colleague from the University's language school in December 2012. This project focussed on the comparison of the student engagement themes emerging from the business school context (this research), to those emerging in the language school context. The language school classes were comprised of the same students as those who were the subject of the research in this thesis.

While this research does not seek to explain why, as reflected by a tutor participant, *'Language Seminars are fine. We do not have the same issues'*, the themes with general differences are highlighted below in Table 32, with an explanation arising from that PGCHE project.

THEME	CONTEXTUAL DIFFERENCE
Communication in seminar and general participation in discussions	Focus on oral competence – communicative approach with topics centered on students' own interests and localized content.
Classroom layout	Language labs have been designed with this one purpose in mind.
Familiarity with group members	Class size smaller, more frequent and numerous => more familiarity both with tutors and with other students.
Language barrier	Streaming of students into levels based upon target language ability.

Table 32 Differences in themes emerging between NUBS in China and Language classes

### **5.5.6. Reflection on SD phase analysis**

This, the SD phase of this study, was seeded by the understanding of the phenomenon derived from the GI phase, giving the participants in the SD phase a direction and focus, but also a hurdle to jump, since before being able to discuss the themes emerging from the GI phase, the participants first needed to take on board what these themes were and how they had been defined. For this reason, perhaps in addition to other reasons, the SD phase focus groups tended to be of longer duration than in the other two phases.

The distinct differences in themes recognised in the similar context of the language class had a significant impact on the researcher's perception of the impact of context. While appreciation of the cultural and national differences was difficult not to recognise, the significance of contextual differences in the subject area being taught and learned had not been recognised. This reflection rings true to the arguments made in section 4.2.2, but the connection between those arguments, made in relation to academic literature more generally, had not yet been made to practice.

While problems of expectation management were raised to school management in the early days of the research, and the nature of seminar interactions was explained to students (and new tutors) in induction and through other communications, the researcher still needed to wade selectively through the themes and strategies proposed, focussing on those that were relevant to the intended nature and outcome of seminars and other small group learning interactions, rather than those that related to other University contexts.

This feedback from students, initially received in 2010 and 2011, and made explicitly in focus groups, written in the reflection sections of their projects and demonstrated in their academic performance, the following major themes influenced the design of subsequent group projects:

1. Problem-based studies were more appropriate than case studies for undergraduate students
2. The project brief needed to be written in a friendly but clear way
3. The project outcomes should be clearly defined
4. The project needed to address the desired learning outcomes of the module

The resulting brief became the starting point for the next iteration of the AR Phase of the study, the first revised version resulting from this research was released to students for the 2012/13 academic year. These iterations are discussed in detail in the AR Phase analysis section (5.6).



## **5.6. Experimental Testing Phase**

For this third and final phase of the research, only those themes over which the researcher had influence could be re-designed - for the rest, the research stops here but, as argued in the closing remarks of this thesis, they are worthy of further study.

### **5.6.1. Introduction**

Having defined the problems and developed strategies for tackling them, in the AR Phase of the project, the redesign of the process and the implementation of changes in line with these proposed strategies would need to be undertaken and assessed. In this chapter, due to the cyclic nature of discovery of themes and the research of evidence from academic and practitioner sources, the various sources of evidence discovered are brought together into one discussion.

This redesign and testing required that a more positivist and experimental approach be taken in assessing the impact on the process of the changes made: such changes being made to each learning cycle, over the following three academic years. Different strategies in the design of both the teaching and learning interactions and in the project brief that was to be used as a guiding tool for the AIS module, the focus of the AR Phase of the study, would need to be tested.

For each cycle, all students in the AIS module were required to attend 4 two-hour seminars and 8 lectures, each addressing a topic relating to the group project. Other lectures addressed topics that were not within the remit of the group project. For two cycles, the researcher presented both the seminars and lectures for this module, for the other cycle, half of seminars were delivered by a colleague.

### **5.6.2. Coursework analysis**

#### **5.6.2.1. Introduction**

As in Gram et al. (2013) coursework projects set for students to complete in groups, during the study, were used to inform this study. The coursework design,

defined in the project brief, has taken three forms, each form informed by the previous iteration of the project brief:

In 2010/11, an Ivey Business School case study was employed, in which students were asked to analyse the strategic alignment and implementation process of a large Chinese company, Keda, provided with the information contained in a 17 page brief. The main focus of questions and apparent hesitance by students, when engaging with this study, related to context setting - seeking more detail to enable them to relate to what was going on before being able to form a proposal.

In response to this focus away from the desired area of learning, the second form for 2011/12 was designed as a case study where, in an imaginary scenario, the student class had decided to set up a company, upon graduation from UNNC, and needed to design the accounting information systems to support this imaginary company. Thus the people were known and, although the context was imagined, it was of their own design. Student reflections on this process indicated that while they knew the people and were able to paint the remaining context, they had no practical experience within such a company or industry.

The third form, as employed in the 2012/13 iteration of the module, was a problem-based exercise, set within the students' own context. As indicated by the literature, the problem needed to be plausible, and so an imaginary conversation was scripted to give rise to and define the problem. There were some noticeable impacts of these changes to the coursework and overall approach to teaching the module on the behaviour of the students and teachers involved in the process. These differences were also highlighted in a focus group conducted following the final lecture and seemed positive.

The questions about context and problem seemed to have disappeared, but were replaced with questions about assessment and tutor expectations – 'how will I score a high mark'. This would seem to indicate a need to address these questions at an early stage in the module in which the expectations of all stakeholders can be

addressed. This is perhaps particularly true of online community collaboration, to which the students' have not previously been exposed. In addition, the project management skills employed in dealing with the coursework, seem to have been inadequately developed, so this will also require additional focus in subsequent iterations.

In the seminars, discussions and activities were designed to assist in the development of the group projects. During these interactions relating to the different renditions of the project design – 2011/12 - "Case Study Brief", 2012/13 - "There's no accounting for students" (Appendix D), 2013/14 - "Are students accountable?" (Appendix E) and 2014/15 – "Students accounting for 2014/15" (Appendix F) - students were asked to reflect on the research process and, in the last two projects, were required to account for the time spent on resolving each of the problems identified in completing their projects. These reflections provided additional insight into the project development over time, the approach taken and whether or not they were able to focus on the desired learning outcomes, rather than on problems relating to the teaching and learning process.

In the following sections, the topics chosen as a focus for each project, the reflections made within those projects, the assessment of those projects and the communications (email, online bulletin board and discussions) made regarding those projects are analysed, before the students own evaluation comments from their SEMs are analysed.

#### **5.6.2.2. Topic Choices**

In the 2012/13, 2013/14 and 2014/15 learning cycles, student groups were asked to choose a topic, that impacted on the teaching and learning cycle of AIS, for which to prepare an account. For each topic, student groups carried out evidence-based research, including focus group discussions and interviews, to gain a better understanding of their chosen phenomenon.

Although it was explained to the students that the choice of 'accountable' – that for which they would prepare an account – was not important at all, deciding which activity to account for became a process into which many student groups expended a great deal of effort and resources. Making this choice of topics was therefore seen to represent an important decision from the perspectives of the student, or perhaps the first important decision of many, the making of which required the group of individuals to develop their working relationships to become a project team.

Due to the nature of the remit of each brief, the information produced by their account needed to be useful to a module stakeholder. This often led to the argument being developed in reports that the chosen accountable provided insights to help decision-makers change or redesign an aspect of the module or other related process. For some groups, this aspect of the project was a motivator, particularly those with a change agenda. Thus the cause of frustrations of being a student in the given context were often reflected upon as being a driving force behind the choice of topic for the research.

In the following table, the topics chosen and the number of groups that chose to account for them are summarised by year.

TOPIC	2012/13	2013/14	2014/15
Project activity	12	11	16
Preparation	9	8	10
Impact of technology	3	5	2
Health and sport	1	4	1
Module work balance	1	3	1
Class environment	1	1	
Attendance		1	

Table 33 Summary of research topics chosen for AIS group projects

The arguments presented in support of the chosen topics – why were these topics interesting to stakeholders – demonstrated that these were considered the most problematic areas of the student experience studying in this context. There would also seem to be parallels between the most prevalent topics and the themes emerging from the GI phase of this research.

In each project brief, a section reflecting on the project was in some cases required and in others, recommended. Some of these reflections provided insights into the decision-points that had proven most problematic during the course of the project – for instance the choice of topic as discussed in the previous section. While the content of these reports, and these reflection sections in particular, would provide additional evidence from the perspective of the student, analysis of this data did not take place for this thesis, such analysis reserved for later research.

#### **5.6.2.3. Assessment**

Included for completeness and since the data is available, the average marks awarded in each year, for the group project, were as follows: 2011/12 61%, 2012/13 66%, 2013/14 72%, 2014/15 69%. Recognising that there are so many variables that might have influenced these assessment outcomes, it is perhaps best only to reflect that in each year, a high standard of work was demonstrated, when measured against the Marking criteria (Appendix G) in use at the University.

#### **5.6.2.4. Reflection**

As might be expected, there has been a fair range in the quality of the work submitted over the years. However, an observation across the board would seem to be of a greater level of reflection in both the coursework and exam scripts in later iterations of the project. Is this due to a change in the way that these students see their world – taking on board the evidence-based approach, or the tailoring of their work to meet the perceived appetite of the assessor?

## **5.6.3. Communications analysis**

### **5.6.3.1. Introduction**

Researcher notes taken during (or immediately following) these interactions, bulletin board discussion, researcher notes relating to face-to-face meetings (recorded on a spreadsheet) and emails which, in this later phase of the research, became a dominant form of communication between tutor and student, were all monitored.

These communications were in addition to the teaching and learning interactions during which each group and student had the opportunity to discuss their projects with their tutor. These teaching and learning interactions were held on a weekly or twice weekly basis and each group enjoyed approximately 15 minutes of this type of mentoring discussion time per session.

### **5.6.3.2. Comparison**

All additional project related communications with the tutor were analysed into two types. Those relating to group decision-making, such as 'what should we do next?', 'how should we structure the report?' or 'what is the most important part?' were coded together as decision making queries, where the student was looking to the tutor to support or make a decision on behalf of the group, were coded as 'DM' for decision-making.

Group consensus among all students engaged in the AIS module process also seemed to emerge swiftly, as identifiable from the speed with which new themes for email conversations came about, apparently swinging from one theme to another in unison as they emerged from student interactions not otherwise captured in this research process - *"I heard that..."*, *"My roommate says that..."*, *"Is it true you said that..."*.

Those communications relating to the taught content or desired learning outcomes, such as problems understanding Soft Systems Methodology, or 'how do I write summary queries?' were coded as 'LO' for learning outcome.

Coding from bulletin boards was made relatively easy using the export function from Moodle for analysis in Excel. An excel spreadsheet was maintained and used to record both face-to-face meetings and email communications.

Where communications included both DM and LO discussions, the communication was included in both DM and LO records.

The resulting summarised data was then used to create the communication summary chart (Figure 37). From the chart we can see how, in 2012/13, the communications increased as the project timeline progressed. We can also see that DM questions outnumbered the LO communications by at least two to three times.

In all iterations of the learning cycle, the volume of communication that took place about decision-making in the process in which students were engaged (DM) compared to those relating to the desired learning outcomes of the project (LO) seemed enormous – one major aim of the AR Phase of the research being to move the focus of that communication away from the assessment process and towards the processes designed to achieve learning outcomes.

Changes in the project brief and the way it was presented in T&L interactions in the 2013/14 iteration seem to lead to an acceleration of the communication process, but the number of DM communications remained relatively unchanged over the course of the project.

In the third iteration in 2014/15, the most significant change – the decision to empower students - meaning that they should develop an argument to persuade the tutor that their decisions were correct, rather than to look to the tutor for decisions was made. In addition and as discussed below (5.6.4.3), the first seminar was altered to include a project brief discussion. These two alterations seem to

have led to a significant reduction in both LO and DM communications and again all communications seem to have been accelerated.

Acceleration of these communications may be seen as a good thing, when bearing in mind the procrastination themes identified during the research, since it means that student groups were engaged with the research earlier on in the project timeline.

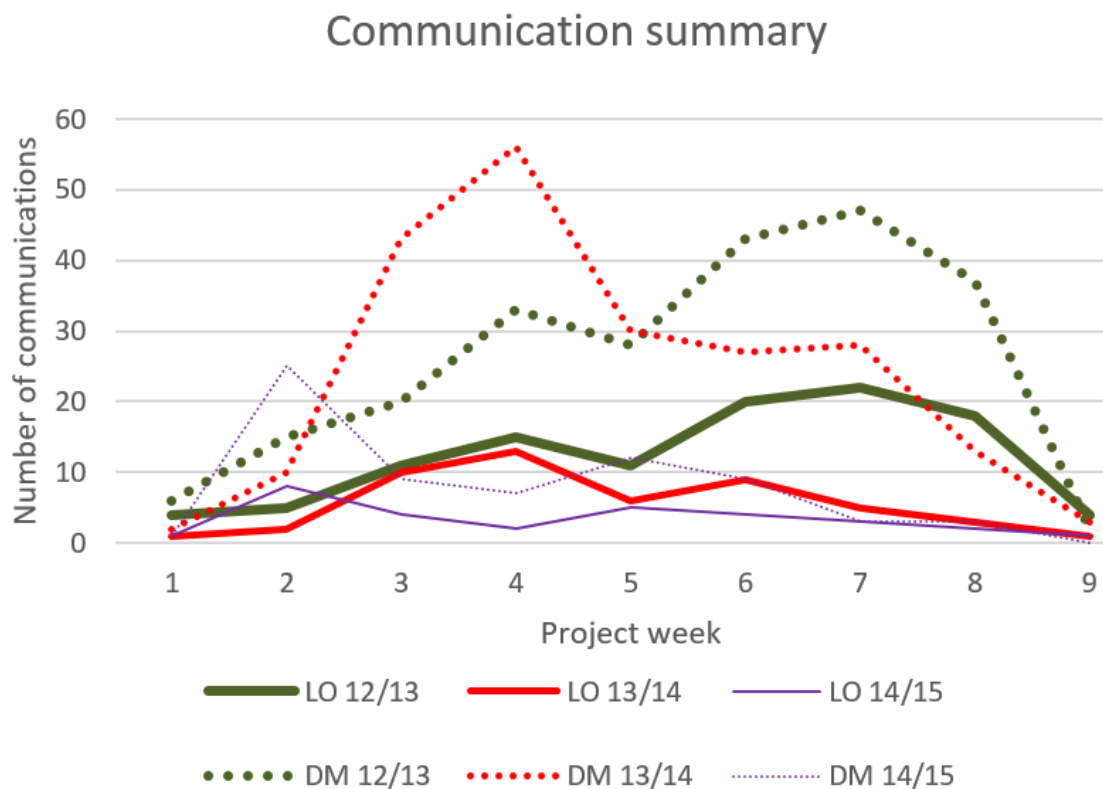


Figure 37 Chart summarising the nature of student group project communications

The total number of tutor communications reduced over the three years from 335 to 220 to 84. This having been said, the total number of students also varied from 172 to 216 to 188. This variation in student numbers lead to a variation in the number of group projects from 27 to 33 to 30 and, since the communications being considered for this analysis relate only to the group project, these variations are perhaps the most relevant. Factoring these changes into the comparison, the number of communications per group was reduced from 12 to 7 to less than 3.



Another interesting aspect of these additional communications was the number of face-to-face meeting requests. In 2012/13 these totalled only 6, in 2013/14 33 and in 2014/15, 30. As a percentage of total communications (for which meetings may be seen to represent a substitute) the ratios were as follows: 2012/13 2%, 2013/14 13% and 2014/15 21%.

Some research project coursework also chose to analyse group behaviour in asking for help. As can be seen from the example below, from 2014/15 (Figure 38), the majority of this time spend was, as reflected in Figure 37, in the early stages of the project.

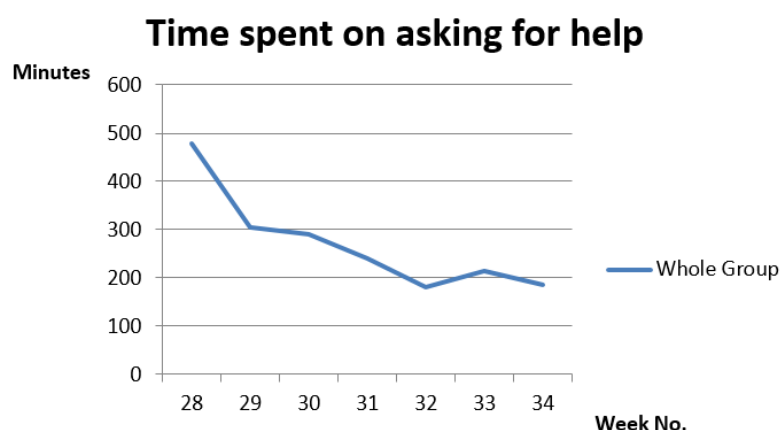


Figure 38 Chart generated by student group 021 in the 2014/15 iteration.

### 5.6.3.3. Reflection

It was nice to see some material difference between the different iterations of the group project, however with the complexity of the project, involving changes to multiple small group interactions along with the modifications made to the principal tool, disentangling cause from effect would seem to be problematic.

The advancement of engagement with the project, overcoming the procrastination period recognised in the research is seen as a useful improvement to the way students coped with the project.

The reduction in the number of communications might be interpreted in different ways – was it a disengagement with the tutor or a result of empowerment, or both?

## 5.6.4. Focus Group and SEM analysis

### 5.6.4.1. Introduction

On the third week of each semester, a focus group of AIS students was designed to discuss the nature and design of the group project brief. Groups were asked to explain their understanding of the project and then to draw an individual map before working together to agree a group map of the AIS group project process. Figure 39 and Figure 40 are examples of these maps. For further samples see Appendix I.

For many student groups, agreeing problem definition and the way forward seemed the most problematic decisions to make but, once these decisions had been made, progress through the project seemed swift. The difference in focus and perception of what the project process was about is clearly demonstrated by the differences between the following two maps both drawn in response to the task definition "Working together as a group, draw a rich picture of what you understand to be the AIS group project".

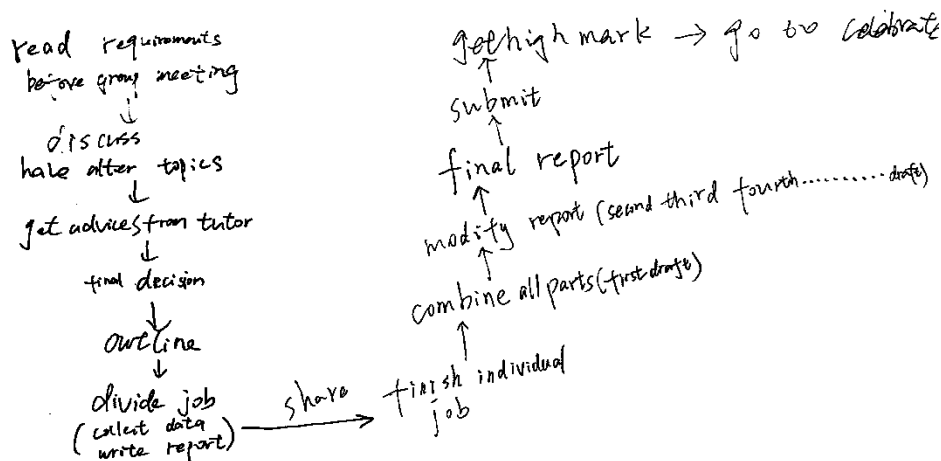


Figure 39 Map demonstrating the student perception of the research process

The first (Figure 39), demonstrated an understanding of an iterative approach to a generic group reporting process – a surface understanding – and the second (Figure 40), demonstrating the different problems identified in the project being



Following the final lecture, focus groups were then conducted to provide students with the opportunity to provide feedback and to contribute to the design of the group project brief for the following year's cohort of students.

In addition, and as part of the University review and feedback process, following each teaching and learning cycle (academic semester), Student Evaluation of Teaching (SET) and Student Evaluation of Module (SEM) data was collected on a voluntary basis. These questionnaires – most particularly the open questions – can give further insights into the student perception of the cycle.

In the following sections, the data collected from the focus groups and SEM questionnaires, in each of the experimental iterations in the AR Phase of this research, is analysed before comparison and reflections are made.

#### **5.6.4.2. 2012/13**

In the first iteration of the AR Phase, focus group tasks revolved around the determination of student progress through the group project and identifying barriers to progress.

There seemed little difference in the first two focus group participant's progress in coming to terms with the project, although due to the number of initial decisions required of the project group in the early stages, it became clear that progress was difficult for the students to gauge.

In this iteration, students needed to determine the nature of an imaginary company for which to propose a suitable information system, whereas previously the project had related to a case study set in an unfamiliar context. By making the organisation imaginary, the problems of an unfamiliar context were hoped to be overcome, but these contextual issues while initially overcome were, by the time of the second focus group, replaced with doubt over the selection of the nature of the imaginary organisation. In some ways, this seemed to be a step backwards rather than a step forwards, as students realised that they knew nothing about the

chosen industry, and how this related to the different functionality available within commercial accounting information systems.

The group work submitted by several groups relied too heavily on the marketing language of the solution manufacturer, which weakened the arguments made in their reports. The work was also overly standardised, the students following a rigid structure for their reports. It was decided to loosen this structure to enable scope for more variety in approach and in presentation of the research work and to emphasise the need to look for balance in sources of evidence used to support arguments.

In both SEMs and in their coursework reflection, students remarked on finding the module over assessed – an individual coursework element was also required as stipulated by the UK convenor. As a result of this feedback we managed to agree removal of this additional assessment from the module assessment in the following year.

#### 5.6.4.3. 2013/14

The main focus of the focus group tasks in this, the second iteration, was to analyse the project brief and to look for passages of text that were more difficult to understand. For this project the chosen context was that of being a UNNC student – this seemed to completely overcome the issues expressed in both the previous and prior iterations of the project.

This focus on the project brief document was chosen due to early feedback on the bulletin-boards and email communication that students were 'confused' by some of the language used in it. Focus group participants reflected that they had found the brief initially confusing but that following the focus group interaction they had now achieved an understanding of what was expected. This without the intervention of the tutor, but rather from discussing the brief with their peers.

One major motivation to participate in the research seemed to remain constant between iterations – to find out more about the group project and, predominantly, how to conduct focus groups, although feedback following focus groups seemed to indicate that to '*[g]et feedback from other groups' work*' and to '*[g]et ideas about how other groups work on the project*' was a most valued outcome for the participants.

Perhaps holding such a discussion as part of the one of the early teaching and learning interactions would benefit students in making sense of the project brief. This discussion topic was added to the design of the first seminar interaction in the 2014/15 iteration.

It was in the first of this year's sessions that a student recognised that one of the two '*voices*' in the imaginary conversation setting the context for the brief represented a collection of the voices of all prior AIS students. This recognition seemed to alter the way the group related to the brief. They now recognised that this was not so much an imaginary conversation as a guide. However, this came with its own associated baggage, since one group (led by one of the focus group

participants) subsequently devoted significant resources to analysing the text and raising questions about the way in which it might be interpreted – a misplacement of resources it might be argued.

In the second session, frustration was expressed by two participants that their group were spending '*too much time choosing*' – essentially decision-making – in various aspects of the project. They were both hopeful that participation in the focus group would throw up new insights enabling them to advise their groups in making these decisions.

As commented in the generic module feedback, the group work submitted generally demonstrated a wide range of reading and primary data collection to support the recommendations being made.

It was interesting to note how the student focus had changed again in terms of the questions being raised during the semester about this project. When traditional case studies were applied, in previous years, student questions reflected that they needed more contextual information to make decisions. When students were required to define an imaginary company for use as the context for the study, students reflected that they had no experience in the business or context which they were then defining. This year, the main questions revolved about tutor expectation – “how will I score a high mark”, “what should I put where in the report structure”. It was good that context was no longer a distraction, but reducing these other distractions now became a priority.

Another primary concern among students was that they were spending too much time on the project and this was concerning. Some changes were therefore planned, following this feedback and other focus group discussions held following this year's module:

Instead of a completely open structure, a loose structure with content recommendations, would be imposed. More focus would be placed on project

management to reduce project overspend. In addition to including a larger segment of lectures to discuss the use of project management tools, the submission of a list of project steps and a Gantt chart for time budgeting was added for an early seminar.

More emphasis on student empowerment in their work, to ensure that there is:

1. Recognition that the tutors have no set expectation of project outcome and that it is the process and argument development in arriving at that outcome that are being assessed against the NUBS marking criteria.
2. 'Better' collaboration in the research communities.
3. Less reliance on tutor-led decision-making.

This year we took a step closer to placing students into a familiar practitioner context - that of being a student - and thus avoided contextual uncertainty, but by doing so, we opened the door to other distractions.



#### **5.6.4.4. 2014/15**

In the final iteration of the focus group series included in this thesis, several of the common themes from the first two iterations seemed to have disappeared. Now the focus was on the project itself rather than how to do the project.

It was found to be notably harder to obtain volunteers to participate in the research than in previous iterations. Perhaps this was also because the project brief discussion early on in the project had resolved many of the previously common questions meaning that groups were less 'confused' in their work, enabling them to focus on the project, rather than how to do it – the learning outcomes rather than the decision-making.

Having identified the theme of timing and its impact on engagement, specific requests to Timetabling were made to request that rest space be made available before, during and following the lecture and seminar tutor interactions. The duration of lectures was set at 120 minutes although the traditional lecture element of these interactions was reduced from 90 minutes to 60 minutes with the remaining 60 minutes allocated to small group discussion and tutor interactions. Although this latter period was designed to be non-compulsory, the space in students' timetables enabled students to communicate in groups informally. Students generally remained in the lecture room to conduct discussions about their group projects and, when the need arose, raised questions to the tutor accordingly. Focus group questions about these "*spaces*" in the lecture interactions gave positive feedback both from those that had used the space to conduct group activities and from those that had space in their timetable between modules.

Seminars were also extended from 90 minutes to 120 minutes with similar space being built into them. Early on, participants made it clear that for the longer interactions a break was needed and so this was allowed, but not always taken, depending on the activity in which they were engaged. By including these spaces, the interactions were effectively split into 2 separate interactions.

Following these changes, the timetabling themes of frequency and duration no longer emerged in the data collected about the project. However, the time of day continues to be reported as an issue. Unfortunately, Timetabling seems unable to avoid these times completely, but at least they are now aware of the issue and, for me at least, where possible, they have avoided these slots.

It was in the final focus group session of this iteration that it suddenly dawned on one student participant that the group project had addressed one of their own problems when working as an intern, keeping account of their audit activity while working for a firm of accountants. Upon this realisation, their attitude became remarkably positive. Upon further discussion, this led to the conclusion that the project had not been adequately related to previous student experience of accounting for their own actions. Something that should be addressed in the following iteration in 2015/16.

The group work submitted this year generally demonstrated a wide range of reading, reflection and primary data collection to support the recommendations being made. By creating a 2 part submission, most groups seemed able to focus on the research, rather than on "What does Trev want?", although the "What should I put where in the report structure?" did surface as we neared project end.

Overall, this led to better focus on project work and time management and I am pleased that most student groups appeared to be more controlled in their time-spend on the project. This having been said, it was also clear that some groups had problems controlling time spend between members and along the duration of the project.

The response rate for SEM feedback was disappointingly low at 15%, which is about half of the usual response rate, but it was good to see that the majority of students found the module useful and would recommend it to other students.

### 5.6.4.5. Comparison

During the focus group activities, a group of questions was used in the pre-questionnaire to explore participant perception of seminar activity (See sample questionnaire in Appendix G) and the 40 responses are summarised in Table 34.

QUESTION	AVERAGE
Understanding of UNNC small group interactions by students	3.2
Understanding of UNNC small group interactions by teachers	3.4
Knowledge sharing about UNNC small group interactions between students and teachers	3.1
Communications between tutors and students to discuss the small group interactions approach, their requirements and implementation	2.7
Environment that promotes freedom to express opinions in UNNC small group interactions	3.8

Table 34 Average rating of small group interactions on a 5 point Likert scale (1 Poor – 5 Good)

This set of ratings gives a useful overview of the perception of students and tutors of the current design and implementation of seminar interactions in this context. The averages also give the perception that the weakest aspect of these interactions is in the discussion of the UNNC approach to setting requirements and implementing T&L interaction designs between tutors and students. This topic arose in several of the research interactions in themes including ‘*expectation management*’. It may also be seen to relate to the feedback loop in the design process – something found to be notably absent from the UG student handbook design process (5.5.2) and undervalued by students in the normal SEM feedback process, as can be seen by the low level of qualitative feedback exhibited in the SEM analysis above.

The main focus of participant discussions, for both students and tutors, seemed to be on their interactions – that is between students and between tutors and students, as they engage in the tasks/activities of that T&L interaction. It was therefore refreshing to see responses to a question about whether the focus group discussion had been useful to the participant, in the post-questionnaire (Appendix G), that in respect of tutor to tutor interactions, tutors had “*Learnt a lot from hearing others talk about their teaching (this doesn't happen often) and the sharing we had to do are making us more aware of others' views*”. So the communication about the design of these processes was seen to hold value by all stakeholders.

This evaluation was also exhibited in the post focus group questionnaires in the closing questions in all iterations. All participants felt they had benefitted from the research interaction and all but one felt that the University should conduct such focus groups to assist in the review and design of T&L interactions – most proposing a bi-annual review. The one exception, a tutor participant, felt that there were already too many review processes in place, due to the constant changes taking place in several areas of the University administration.

There was occasional feedback in respect of both Chinese and non-Chinese students failing to engage in their group work until late in the project. One group in this iteration applied for unequal marking in respect of a Chinese student who had completely disengaged from the process.

Concern was voiced over non-Chinese and Chinese students. Explanations for this non-engagement with the process varied, from over-partying to over-working – internships, voluntary commitments, external exams etc. In some cases, early warning enabled the issue to be resolved by tutor intervention, in some a breakdown occurred through personality/cultural clash, in some, there were individual mitigating circumstances and in others, non-Chinese speakers had been excluded from communications for linguistic expedience and other reasons best known to the Chinese students making this exclusion.

## **5.7. Reflection on data collection and analysis**

From the earliest stage it was recognised that the project was going to need to take on board the perspectives of multiple stakeholders in the process. That these stakeholders might have markedly different perspectives on the same phenomenon was also realised from the outset. But the degree of difference between consensus reached between different groups of participants with a similar stake and demographic, in addressing the same themes, was remarkable. For example, one student group would argue strongly that a report should have an imposed structure, while another would agree the complete opposite. This meant that further data collection was needed to analyse such differences more closely.



## **6. Discussion**

*"The question remains, "Is it possible to observe and describe what happens in natural settings without some theory to guide the researcher in what is relevant to observe and to assist in naming what is happening?" Qualitative forms of inquiry demand that theory (i.e., theoretical frameworks) be used with imagination and flexibility. As John Dewey noted, it is part of our need to reeducate our perceptions."*

Bloomfield (2013:179)

### **6.1. Introduction**

In this chapter the themes and strategies identified in each phase of the research are brought together with the extant literature to enable the discussion of differences and similarities, between those discovered in this research and those discovered in other contexts.

In the first section the themes emerging from the GI and SD phases of the research are discussed, framed between those that identify to the findings in previous literature and those that are themes discovered in this research but not reflected in the literature.

In the second section, the strategies proposed and tested in AR Phase of this research are then discussed in comparison to the frameworks proposed by Li and Campbell (2008) and Liu et al. (2013:67).





## 6.2. Themes

*"When a theoretical frame is independently developed, the literature to which it might contribute is not self-evident."*

Locke (2015)

### 6.2.1. Introduction

For the discussion of themes influencing the central theme of student engagement, the structure emerging from the participant analysis of the GI phase is used and supplemented by the researcher's stream of analysis, before comparison with the conceptual frameworks proposed in the literature by Tani (2005), Holmes (2006), Li and Campbell (2008) and Eddy-U (2015).

This comparison has been tabulated in [Table 35](#) below. In the discussion that follows, the first theme identified in that group of themes has been used to enable the structure of the table to be mapped to the conversation. This use of the theme name is not meant to indicate a merging or summation of these related themes into one of that name, but is instead a name of expedience merely helping the reader to link the comparison table to the discussion.

THIS RESEARCH	LI AND CAMPBELL (2008)	TANI (2005)	HOLMES (2006)	EDDY-U (2015)
<b>Language skills</b> , Student-student communication, Written English Level, Oral English level	Different levels of language and writing skill			Improve English skills; practice English speaking; learn new vocabulary. Insufficient English ability, too difficult; too easy; don't understand instruction, Talkative in English; higher English proficiency;
<b>Expectation setting</b> , Evaluation, Result of the seminars	Different interests and expectations	Not understanding assessment method		Marks - to get marks/avoid mark deduction
<b>Preparation</b> , Hard-working, The knowledge of the students, Efficiency			Efforts on high achievement	
<b>Interaction design</b> , Teaching, Knowledge of the tutor, Tutor's organize, Selection, Size, Composition, Gender, Freedom		Teaching approaches	Respect for knowledge, teachers and authorities	Activity is fun / exciting / not boring / unexpected. Boring topic, dislike activity type, same interests/different interests Opposite sex
<b>Problem setting</b> , Problem identification, Good topic, Topic, Members' value of the topic, Context setting	Members' attitudes towards and perceptions of the relevance of the assigned group tasks and activities,			interesting topic
<b>Project management</b> , Procrastination Problem solving, Idea sharing, decision-making (DM)	Poor time management skills, problem solving skills, understanding of the decision-making process			
<b>Individual characteristics</b> , Willingness to share, expressing ideas, Confidence, Willingness to overcome the initial embarrassment, Motivation			Classroom conformity	Can learn new ideas. Personal vision - personally motivated to learn English; to prepare for English use in future / to avoid failure in future; to further motivate self. Lack of personal vision - no motivation to learn
<b>Cultural difference</b> , Culture appreciation		Cultural influences	Preference for competition and authority centred models of learning	
<b>Group dynamic</b> , Roles, Arguments, Aggression, Relaxing atmosphere, familiarity.	Conflict management and resolution skills		Inter-personal communication differences	Good groupmates - know each other well; motivated to learn English. Bad groupmates - don't talk; speak only/mainly Chinese; bossy / don't listen; unmotivated / irresponsible; don't know them; lower English level. Social Situation - Good classroom atmosphere; peer pressure, desire to improve social network/teamwork abilities. Bad classroom atmosphere
<b>Tutor intervention</b> , tutor-student communication		Teacher-student relationships		Teacher encouragement/pressure
<b>Environment</b> , Room layout Ambient sound				
<b>Timing</b> , Duration of seminars, Frequency of seminars				

Table 35 Relating this research to the frameworks to demonstrate similarities and extensions

## **6.2.2. Discussion of themes identified in the literature**

### **6.2.2.1. Introduction**

In this section, themes identified in the GI phase of this research are discussed in relation to the extant literature.

### **6.2.2.2. Language skills**

English language use in seminars, and how this impacts on willingness to communicate in small group activities in seminars was the most frequently recurring theme in this research and the subject of many practitioner conversations in this context. This research may therefore be seen to confirm much of the research carried out in language research in the Chinese context and that relating to studies of Chinese students in non-Chinese contexts.

The literature would seem to indicate that these themes are not peculiar to the Chinese student working in the context of this research, but may relate to the use of the second languages in teaching and learning interactions more generally. Where language was a barrier, either through being 'too difficult' or 'too hard', this was also found by Eddy-U (2015), in the language learning context in Macau, to be a de-motivator to communicate in this type of interaction. This is interesting since, in this research, the comparison made of themes emerging in the business school context to those arising for the same students engaged in language learning activities (5.5.5.3) did not reflect the presence of the same issues in the language class context. This difference may be explained by the complex interplay of motivating themes, participants feeling motivated and demotivated by separate themes (Eddy-U, 2015), the nature of the interaction (Matsuda and Gobel (2004), Yalçın and İnceçay (2014)), or other differences in context. However, as suggested in this research, the difference between the language class setting and that of the business school may be that learning to use English was itself the motivator for being present in the interaction, rather than using the language as a tool for learning other content.

While it should be recognised that, in the context of the research, barriers to entry to undergraduate study at the Business School are in place, to ensure quality of English ability, as necessitated by the delivery of all content in that language, there are naturally differences in student abilities in all aspects of the mastery of the language.

Does the frequency of reporting of language as a barrier to small group discussion indicate that this level of ability is too low? For some students, this may be the case, or at least they may perceive their ability to be too low to feel confident in its use.

### **6.2.2.3. Expectation setting**

While the expectations of time commitment and activity for the group interaction, in this research, were laid out in the module documentation and explained in lecture, it was not until they come to engage with other students that, for some students, performance requirements seem to dawn. It also became clear that for some modules, this explanation had not been given, or at least had not been understood by the students.

The marking criteria (Appendix L) which are applied to all assessments are seen to be vague and so, for some types of assessment, where students had frequently asked for greater clarity, the way in which the assessor would interpret the marking criteria was explained in lecture. An example of this was in respect of online contributions to discussion groups where the timing of contributions was assessed as equally important to the contribution itself, factors of timing, quality and quantity being considered in arriving at the final mark.

Falling outside of this research, the addition of peer review to online contributions, being tested in the current iteration of the study, would seem to be an effective strategy to enable students to receive further formative input on the quality of their work. Students seem to be responding positively to this addition.

The importance of evaluation from three perspectives arose in this study:

1. Student and tutor evaluation of the utility/efficiency of the interaction design as reflected by the tutor in redesign of the interaction for a subsequent iteration and by the student in the formal evaluations of the module and teaching.

In this research, reflection and experimentation by the tutor on the utility of the interaction was the focus of the research. Such reflective teaching is often described as important in both student and teacher development and education (e.g. Fullana et al. (2014), (Barton and Ryan, 2013)). Reflections on performance and redesign of interactions are also reported back to students in the end of semester convenor feedback documents published to students. This feedback addresses concerns or opportunities raised by students in their SET/SEM survey responses.

As explored by Law and Meyer (2010:28) through an Inventory of Learning Styles (ILS), students have individual preferences for how they learn and an expectation, of teaching and learning interactions, that they meet those needs and preferences. It may be seen to be the responsibility of the teacher and the University to meet those needs, unless they conflict with the needs of others. Such conflict may be seen to lie in the needs of other students with conflicting learning needs involved in the same interaction and those with an investment in the quality of the learning outcomes, from alumni holding a degree from that same institution, to potential employers.

2. Evaluation of the contribution by student peers during an interaction

Fear of a low evaluation by peers was seen as a reason for reticence to engage in a discussion, until a student felt comfortable that their idea

held value. This theme is reflected across both the Engagement and English as a First Language (EFL) literature.

### 3. Tutor evaluation of performance for the module mark.

Despite efforts to make clear the assessment method, 'How will we be assessed' for this work or performance remains as a frequently asked question, despite the publication of the marking criteria used for all assessment at the University. This may perhaps be due to the language used in the marking criteria which is necessarily 'loose' to enable its application across the broad range of assessment designs used.

Perhaps, as reflected in the analysis section of this work, the student will always be uncertain of the height of the bar that they must clear, until that is they have achieved the leap successfully.

## **6.2.2.4. Preparation**

While hard work, strong will-power and effort was respected among group members as an individual characteristic, confirming the arguments presented in Holmes (2006:26), from this research it would seem clear that preparation itself does not necessarily lead to a greater willingness to discuss or share insights gained through such preparation during the interaction. However, a lack of preparation, led to uncertainty of the value of ideas generated by the individual and therefore a reticence to risk being wrong by contributing the idea to the group.

The theme of Efficiency in their work, occurred often in this research, although the term had a wide variety of definition and was often related to speed of reading in English, hence its relation to preparation for learning interactions where such preparation often required reading of related materials.

This theme of efficiency also regularly came up in the group project coursework as a chosen system output of the project time data collected during the project,

but here again, the definition of the term varied and, perhaps due to a lack of resources, was not addressed by them in any great depth.

#### **6.2.2.5. Problem setting**

With a consistent reported student satisfaction over the past two years greater than our sister campuses, in the UK and Malaysia, by some 10% and 20% respectively, this directive may have had a positive influence, in that respect, unless we are again seeing a difference in behaviour in these evaluations due to a cultural concentration.

The term Freedom used in defining a theme in this research referred to the perception of freedom to express ideas without fear of repercussion – the liberation of ideas or, as some would have it, the root of critical thinking (Gram et al., 2013). Why students felt or did not feel free to express themselves seems to be dependent on their previous academic experience and trust of the tutor, more than of the students around them. Thus the theme seems to relate more to student–teacher interactions.

As discussed in the literature review, problem–based learning (PBL) revolves around the setting of a problem within a specific context. The approach enables the student to free themselves of the idea of a correct answer, to choose an area of the problem that interests them most and to explore possible solutions to recommend. For Chinese students, who have not experienced this form of academic freedom and the opportunity to critically evaluate evidence to inform their decision-making, this newfound liberty is daunting. Even though the project brief explains this liberty and the problem is explained within a framework that makes it explicit that there is no correct answer, there is invariably a number of students and student groups who try to return to a tutor focussed approach to learning, as demonstrated by the DM communications discussed in the Analysis chapter.

This coping response is identified across the literature reviewed in respect of Chinese students engaged in Western education institutions and in PBL in particular (Gram et al., 2013:770). However, as in this study, the confusion and frustration experienced by Chinese students was found to be temporary and the strategies employed in the AR Phase of this study found ways to shorten this temporary state.

#### **6.2.2.6. Individual characteristics**

*"I mean, everyone's different but some people were too different"* (A student)

(Elliott and Reynolds, 2012)

While it was recognised that verbal expression or sharing of ideas is not the only form of active collaboration, particularly the student designed focus group interactions but also in a group teaching and learning interaction, non-participation in group discussions was significant enough to have been raised as a major concern among participants throughout this research project. Thus this research confirms previous research findings. The preference or choice to remain silent, even by a single student in a small group interaction, had a direct and negative impact on the group dynamic and atmosphere generated during a group interaction.

Conversely, over contribution verbally to a group discussion – bullying tactics or simply over-enthusiastic contribution was also seen to negatively impact on group dynamic and the willingness of other participants to contribute to the discussion, some students refusing to engage in group discussion when 'aggressive' communication was present.

Here again the multi-layered forms of motivation for each student, as influenced by factors inherent in the interaction design and the individual, need to be taken into account. Gaining an understanding of the motivations of each student engaged in the interaction would prove useful in informing the interaction design to suit individual learning preference (Armstrong and Mahmud, 2008:202), yet the



interaction design needs to cater both to the preference of each participant, and the desired learning outcomes (Eddy-U, 2015).

#### **6.2.2.7. Cultural difference**

While cultural difference was often seen as an explicator of individual preference in the decision to communicate, the four aspects of university culture, as analysed by Liu et al. (2013:57) material, system, behaviour and spiritual culture were seldom explicitly discussed.

However, students with a broader cultural experience or appreciation were accorded respect and achieving a better understanding of non-Chinese student culture was seen as a highly prized aspect of learning from small group interactions by mainland Chinese students. Paradoxically, difference in culture was also seen as one of the barriers to group interaction.

This research may therefore be seen to support findings in research into the impact of culture on willingness to engage (De Vita, 2000), communicate or share ideas either in small group face-to-face (Holmes, 2006) or in online interactions (Angelova and Zhao (2014) and Young et al. (2012)).

#### **6.2.2.8. Group dynamic**

Group size, composition and the familiarity of group members with each other were all highlighted as themes in this research.

Group selection for the small group interactions, most particularly in respect of longer term collaborations in group projects, was frequently reported as a factor influencing these group interactions. The most frequently reported preference being to enable students to select their groupmates. This aspect being related to familiarity with group members from the initiation of a project, rather than wasting time in developing team skills in a new group. It was also reported, by student participants, that self-determination of groups enabled students to group with like-minded peers who shared their work ethic in respect of the project. This theme

then also related to concern over the free-riding phenomenon and a concern for equally study focussed hard-working characteristics among group members.

Gender, seen by some participants as a cause of reticence to contribute to a discussion through increased shyness or fear of appearing foolish, was recognised as a potential influence over the development of group hierarchy. This view would seem to be influenced by the traditional view over gender roles in China, although it would seem that for some, particularly from less rural areas, a view of imbalance is fast changing (Zhang, 2006:547). The positive effect on academic achievement related to the mixing of genders in group projects, as reflected in Orlitzky and Benjamin (2003), was not tested during the course of this study, although the idea seems supported by the work of Bevelander and Page (2011) in respect of performance in practice.

Gender, age, nationality, language ability, experience/knowledge along with 'power' in terms of party membership, group representation, connections or wealth were all reported as themes influencing the group dynamic or hierarchy development during an interaction. Students generally seemed to know who held 'power' in their class and those with such power were not expected to carry their weight – because they had no need to. This was not expressed resentfully, rather in humour.

A more frequent and highly ranked theme in group composition was that of familiarity with group members, either as a starting point, or the time it took to become familiar through working together. It was not uncommon, for instance, for groups to report sharing a meal in the early stages of a project, the sole purpose of which was to become more familiar with each other as they transformed their group into a functional team, by negotiating roles, specialisations and working practices.

This work supports the findings Wu and Bao (2013). While siblings and local registration were not considered in this research, gender and CCP membership

were identified as sub-themes to perceptions of hierarchy. The influence of such hierarchy and perceptions of them may be seen to be present in the interaction of students both socially and in their classroom interactions, both with each other and with tutors.

#### **6.2.2.9. Teacher interventions**

Although frustration has been expressed in this research, participant tutors seem to have devised strategies to cope with, rather than reacting negatively to, instances of prolonged silence in the classroom setting. The nature and timing of interventions being reflected upon in developing these strategies. This would seem to reflect an appreciation of student reticence due to factors including those identified in Nakane (2007) and in Ha and Li (2012:245).

It is recognised through this research and the researcher's teaching experience that, when teaching groups of mainly if not entirely Chinese students, greater patience in interactions is needed. This research may therefore be seen to support the findings in the literature, on the patience that would seem necessary with any such second language interaction (For example, Ha and Li (2012) and Zhou et al. (2005)).

### **6.2.3. Discussion of themes not present in the literature**

#### **6.2.3.1. Introduction**

In this section, themes that emerged from this research that were not found in the engagement literature are discussed.

#### **6.2.3.2. Environment**

Perhaps highlighted due to the focus in desired learning outcomes of the module on focus group environment setting, the teaching and learning environment – the 'material culture' of the University (Liu et al., 2013:57) was raised on several occasions during this study. The idea that change was needed in respect of teaching buildings (classroom layouts and ambient noise), students' dormitories (number of

students per room and curfew), campus restaurants (price, queues, quality, health-risk), communication technologies (reliance on email and high volume of email) and access to information (particularly in respect of VLE speed and limited access to resources external to China through the internet) due to their respective impacts on research, preparation, mood, sleep and health. From the tutor perspective, interaction design was also affected.

The excitement over anticipation of a repeat opportunity to conduct a seminar outdoors, as expressed by some student participants in this research, was infectious. That leaving the classroom environment was valued in this way was explained in this research in three ways. First, from the tutor perspective, the environment was seen to be unsuited to the purpose for which it was being used. This was reflected in the proposals for redesign of those environments, most particularly in respect of the computer labs used for T&L interactions. Secondly, some proposals for off-site visits as part of a project design, were greeted with a positive voice in discussions involving both tutors and students, since this would add practical insights to the interaction. Finally, the development of a relaxed atmosphere to reduce inhibitions to communicate in small groups included changes to the environment in relation to comfort, ambient noise and when designing focus group interactions, conducting these interactions outside on the grass.

While clearly relevant in other fields, drawing a relationship between the material culture of a university and small group interactions was not something identified as significant in the engagement literature reviewed.

### **6.2.3.3. Timing**

The themes of duration and frequency in the design of long term teaching and learning interactions, discovered in this research, do not seem to have been reported in the engagement literature. Some students found 50 minutes interaction to be too short and other that 110 minutes was too long. Others expressed no preference. While there are limitations on the number of contact hours between

tutor and student during the course of a module, how these interactions are paced – their frequency and duration – as long as they meet the total number of contact hours for that module, remains at the convenor's discretion. Due, in part, to the feedback from students, there seems to be some movement towards a 90 minute duration for their seminar interactions.

#### **6.2.3.4. Tutor monitoring and student pressure**

In this research it was highlighted that students have adopted technologies to support channels of communication, outside of the University monitored systems, through which experiences in interacting with tutors are shared, and profiles developed enabling tutor reference and style to be shared. This theme is not something reported in the engagement literature, but the use (and abuse) of social media for similar purposes would seem to be modern phenomenon impacting on all walks of life.

That tutors were apparently coerced by students to teach in different ways – in this research through the use of silence and non-response - and that some tutors would change their teaching approach under such pressure, may be seen as a healthy sign of student empowerment, but only if the student preference for teaching style is in their best interests in learning from the interaction.

The difference in perspective over what pedagogies are more appropriate to the context brings the conversation back to explaining the reasons for, and value of, discursive pedagogies, including small group learning interactions, taken from Western contexts and applied in this Chinese context. But is this context a Chinese context simply due to the location of the British university in China, or is it passed a tipping point, due to the ratio of Chinese students?

#### **6.2.4. Reflection on themes**

This attention to the themes of timing and environment may have been focussed due to the timetabling about which students frequently complained. But may also reflect an increase in empowerment due to the attention paid to student centred approaches over the period of the research project. This management publicity, aimed at increasing student participation in informing teaching and learning interaction, along with the lecture emphasis on student empowerment in their projects may, as suggested by Kvale (1996), have influenced participants to engage in the research with a greater feeling of empowerment to change their world experience.

So who is to say how much contribution/self-expression/idea sharing is appropriate to any given group interaction – the School? The tutor? The student? Conversations about the need for a relaxed atmosphere, ice-breakers and familiarity with members of the group all seem to suggest that these factors determine willingness to share ideas and the reticence to speak ('Willingness to communicate' - (Eddy-U, 2015)). While remaining silent, despite interaction design, tutor intervention and 'coercion' or peer pressure, may also be related to risk-avoidance and the fear of losing face (Eddy-U (2015), Wang (2012:524) and Zhang et al. (2010)), although the literature and this research would seem to indicate that one of the main causes of this apparent fear relates to the need to use a second-language to express these ideas (Briguglio and Smith, 2012). These language skills, particularly oral skills but also reading and writing skills, were one of the most frequently recurring themes to arise from this research. They have also been identified, across the extant literature, as the cause of much of the reticence to engage in group discussions and tasks, where these are conducted in a second language (Briguglio and Smith (2012), Liu (2006), Mak (2011) and Eddy-U (2015)).

It is not only the tutor that reports frustration with the status quo in this study, but also the fellow students who, in adapting to the classroom culture at a British

university in a Chinese national setting, find themselves without peer ally in attempting to form or join the expected/required conversation in English.

Such coordinated action, through student owned communication channels, enabling the identification of tutor preference, in terms of both the nature of assessed material, and their willingness to conform to student preference for teaching style and the classroom behaviour used to pressure such changes in pedagogy, are something not seen discussed in other engagement literature.

Having discussed the themes identified in this research in comparison to those presented in the literature, in the following section, strategies developed and tested to address them, in the SD and GI phases of this study, are discussed.





## 6.3. Strategies to address these themes

### 6.3.1. Introduction

As explained in Chapter 5.6, since the researcher had control over only certain aspects of the teaching and learning interactions that might influence the themes identified in the GI phase of the study, only those that might be influenced were carried forward to the SD and AR Phases of the project.

In terms of suggesting strategies to address these perceived pedagogical problems in respect of Chinese students in western contexts, most research conclusions seem weak in suggesting remedies although, during the period of this research, the area would appear to be receiving an increase in research attention.

In the following sections, the strategies proposed by Li and Campbell (2008) and Liu et al. (2013:67) are taken as the initial frames for comparison to the strategies adopted and tested in this research. For clarity, perhaps due to the need for brevity in their published paper, Li and Campbell's (2008) first proposed strategy combines two separate arguments which, for this discussion, have been split into two sections: 'Explain why we are learning this' and 'Explain why we are learning in this way'.

Further strategies identified and tested, that extend from these frameworks, are then categorised into two types for discussion. Those that relate to small group interactions in seminars, and those that relate to the longer term engagements in group projects.

### 6.3.2. Explain why we are learning this

**Definition:** Informing students of the learning objectives of the activity.

This theme also emerged in this research with some students finding it difficult to make the link between their previous experiences. Even some, lucky to have had internship experience, found creating this link between academic study and practice difficult, until the exercise had been completed. This is therefore an area

where this research continues to develop the conversation between tutor and student, to help contextualise the problem in a way that more students can frame.

### **6.3.3. Explain why we are learning in this way**

**Definition:** Informing students of the purposes and benefits of group assignments and their relevance to practice.

The various renditions of the brief have included attempts to make clear the requirements of the project (See Appendices), some versions proving more successful than others (5.6.2). Li and Campbell (2008) found that lecturers did not consider students' prior learning experience - their perceptions, expectations, attitudes, personal feelings, and subjectivity (Li and Campbell (2008:212) - and instead 'forced' them to engage in group assignments.

When considering the use of small group interactions as a teaching and learning approach, one should also consider the motivation to study in a context where this is the normal. There is a long standing tradition of the Chinese elite studying abroad, previously seen as valuable in terms of the prestige of such an education, the value of education in these contexts is seen in the employability of people holding foreign degrees - the motivations to study in a western institutions including the acquisition of language skills and the ability to work with people from different countries and cultures (Bai, 2008:210).

To alter pedagogies, intended to use and improve the very skills that students have highlighted as reasons for reticence - such as overcoming shyness or fear when communicating with others in English - would seem to undermine not only the purpose of the interaction, but what would appear to be one of the significant differences between Western and mainland Chinese education - discursive seminars and group based learning, conducted in English. While Chee Mok (2007:132) argue that there is no clearly defined national teaching script and differences in pedagogy are apparent across the institution under investigation in this research, if this difference in education approach is attracting

parents/students/employers, would changing pedagogy perhaps make the institutions and their graduates, in turn, less competitive in the market place?

The strategies put forward in the SD phase of this research, would seem to support students in coming to grips with the challenges faced in a group project and those applied, in the AR Phase of this research, have proven valuable in helping students recognise and cope with what is, for most, a new way of learning.

Focus on the way teaching and learning interactions are designed is highlighted in this research through focus group interactions, seminar negotiation and in seminars addressing related topics such as focus group design. This seems to open the students' eyes to the importance of reflective practice. This aspect of learning to learn, reflection on why we are learning in a certain way, student involvement in interaction design and its positive effect on student feedback on learning interactions, are also confirmed by Feys et al. (2011).

#### **6.3.4. Explain the role of culture in the group interaction**

**Definition:** Discussing how cultural difference impacts on communication and interaction with other students, how culture influences role concepts, perceptions, and belief systems in relation to group assignments and on the way people acquire and process information and knowledge.

In this research, questions of cultural impact on group behaviour formed a significant part of the taught content for the AIS module each year, with two 2-hour seminars being devoted to this discussion topic. To shed light on contextual differences, papers including those of Faure and Fang (2008) and Kaigler-Walker and Gilbert (2009), along with shared practitioner insights from organisations including Da Xue Consulting (2016) were introduced to students for consideration in designing their own small group interactions. The first interaction explaining cultural difference and behavioural patterns in small group interactions and the second being a student led, student taught interaction, where students were able experiment with interaction design. While the focus of these interactions was

important in terms of the learning objectives of the module and their value in enabling students to reflect on such interactions in their work was recognised, it was not until having read Li and Campbell (2008) that the importance of this focus to group projects in general was recognised by the researcher. While often reflected upon by students in their final group work, having made this connection retrospectively emphasises the need to make this cultural linkage explicit to students in early lectures, a point strongly argued by Blasco (2014).

#### **6.3.4.1. Construct a free, democratic and mutually tolerant culture.**

Recognising that the difficulty of appreciating and adjusting to culturally different epistemological traditions and educational practices, explaining the tutor's expectation of the student performance in the interactions of the module is seen as an important stepping stone to acculturation (Gram et al., 2013:763).

Explaining and reiterating that the tutor does not need to agree with the proposals made, but that the validity of the proposal should be able to stand up on its own and convince, is a starting point. However, critical discussion of ideas and proposals between students is the end goal in developing an academic culture. Separating self from the idea so that the idea can be discussed freely without associated stigma to the proposer was an initial strategy adopted to promote such a free environment. The idea worked well in research, using scraps of paper to hold ideas, mixing them and discussing them in turn to determine merit. However, this approach had limited application in teaching practice for the module. Anonymous contributions to an online forum failed miserably, partly through poor implementation, but also due to a perceived lack of motivation to contribute to such interactions. The issue was also partly a technological one, since an anonymous forum in the current interface is anonymous for all participants, whether proposing ideas, or critiquing them. This may be revisited in future work.

In the final seminar, groups present their research to date and are then given the opportunity to critique each other's work, to enable the project teams to strengthen their final submissions, based upon the feedback during these interactions. By this stage in the project, students who have managed to adjust to the culture of PBL group work, are generally positively collaborative and a critical and reflective class interaction develops. However, this has not always been the case, with two notable causes:

1. Students have not adjusted to the idea of critiquing ideas, rather than people.
2. Groups perceive themselves to be in competition with other groups taking part in the interaction and are therefore unwilling to assist in the development of their proposals.

The first of these problems underlines a failure in acculturation and a need to adjust strategy to promote this during the module.

The second has been addressed by the separation of the three groups taking part in these interactions into separate cohorts with similar but adequately different foci to reduce or completely remove this view of intergroup competition and the resulting uncooperative response.

### 6.3.5. Enhance team training

*"more needs to be done by universities to ensure that students develop their interpersonal communication skills in English to higher levels, and that they mix more with Australian students and the broader community"*

Briguglio and Smith (2012)

**Definition:** Skills in group communication, role identification, conflict management, negotiation, expectations, goal setting, problem solving, interpersonal relationships, group cohesiveness, time management, responsiveness to the needs of the group, norms for equal participation, norms of cooperation, allocation of tasks, and specific cooperative behaviours (Li and Campbell, 2008:213).

In this research, the need for greater guidance in teamwork, division of labour and group responsibility for the group projects was also recognised at an early stage. This led to group consultations and split submissions of group project work to generate early focus on group dynamic and working practices. Turning a group of students into a working team later developed into an area of reflection in group projects, particularly in how groups managed to overcome complex decision-making processes using the evidence-based design approach.

By the second iteration conducted in this research, the central theme of the group projects was the design of an accounting information system that reported the time spent by each member of the project team on their project. This enabled better reflection and monitoring of workload balance and time spend on their projects. While this did not lead in all cases to better control of time spend, the project focus certainly raised awareness of both time and project management. This aspect of the project was also reflected upon favourably by students, which would therefore seem to support Li and Campbell (2008:213).

### **6.3.6. Open second classroom**

**Definition:** to enhance the frequency of communication

Li and Campbell (2008) explored a difference in Chinese student behaviour between the formal classroom setting and an informal learning environment – in the absence of the tutor and this idea of a ‘second classroom’ was also proposed by Liu et al. (2013:67) who see this as an opportunity to increase student interaction both socially and academically. Neither seems to have considered how online communities might perform as a possible foundation for such interactions, but in this research, the use of online communities as a tool to further student and tutor interactions was explored, but with little benefit over email communications and seminar discussions.

An insight of this research that supports the theoretical benefit of using ‘second classrooms’ in the absence of the tutor (Liu et al., 2013:67), came from the student

designed focus group seminars, conducted as part of the student research projects. During each of these sessions, the researcher deliberately left the room to remove any perception or impact of a tutor-student hierarchy. Due to the nature of the interaction and the responsibility of the tutor role, the researcher could not completely absent themselves from the interactions, but some groups reflected on the difference the absence made to the relaxed atmosphere they were trying to create for their focus group discussions.

In that same theme was the addition of eleven 30 minute informal discussion sessions following each lecture, where groups were allowed to remain in the lecture hall to continue conversations about their projects with each other and with the tutor. These gatherings seemed to be more relaxed in nature than seminars and seemed productive.

### **6.3.7. Develop an effective group management system**

**Definition:** Group management system to set ground rules, norms, and multiple abilities strategy (Li and Campbell, 2008:213).

The module outline is used to set the ground rules for all interactions, explaining each stage of the module timeline and each activity in which small groups will interact. This outline explains preparation exercises prior to the interaction, each activity within each interaction and the purpose, in terms of the intended learning outcomes and how they relate to the group project and final examination.

Groups were managed through the Moodle interface, to enable control and monitoring of online group communications, and the procedure for allocating people to their groups and possible group size range is explained, as is the logic behind randomised assignment to these groups.

Using the online communication platform on Moodle, and by specifying design variation between different cohorts of student groups, specialisation of group projects was encouraged which further enabled intergroup communications. In

later iterations, such communications were also motivated by assessment, which further encouraged both the development of different strategies to problem solving and sharing of insights between student groups.

Requiring the evidence-based approach in all projects further seeded the need to identify multiple and various sources of evidence to support decision-making. As students came to recognise the value of the approach, so the diversity of research directions came to expand. The impact of adopting these online discussion boards and their use to manage and monitor group performance in this research, can again be seen to support the strategy proposed by Li and Campbell (2008:213).

#### **6.3.7.1. Build relaxed interaction environment**

By changing the design of the small group interactions in seminars to allow the use of first language – as long as everyone in the group understood that language – may have eroded learning of the second language by use, but improved the group dynamic in two ways:

1. Students were able to discuss the topic in their native language, thereby reducing perceived barriers to group communication and its use as part of the learning approach.
2. By highlighting the importance and impact of language choice in these interactions, student awareness of difference and consideration of these differences promoted reflection in their work and performance on why an anxiety over the use of their second language was an issue. This awareness sometimes led to a group of students electing to use English as their language of communication for the module. Peer pressure to use the language, thus replacing tutor coercion and seemingly providing a positive influence over their willingness to use their second language.



### 6.3.8. Clarify individual roles

**Definition:** Roles, duties, responsibilities, ensuring that tasks incorporate various multiple intelligence factors so that all members in the group have opportunities to contribute, and use frequent and open feedback and peer assessment to eliminate potential group problems (Li and Campbell, 2008:213)

In this research, roles and responsibilities were assigned to a group, but unlike the recommendations in Li and Campbell (2008), the individual assignment of such roles was left to the group to resolve. No problems were identified in this research from a failure to make these assignments. However, the use of a problem which required a wide range of activities enabled scope for specialisation and a common approach to solving the problems identified in their work was the dividing of the group into such specialist teams – for example those students with a preference for programming would take on that aspect of the project while others might engage in more research or online communication activities with members from other groups. This having been said, the issues arising from early division of labour, such as a fragmented final product of the group project, were raised during lecture/seminar to ensure that while specialisation was encouraged, the group members would engage in review processes to ensure a coherent proposal was presented as the final project outcome.

### 6.3.9. Encourage students to take ownership

**Definition:** Encouraging students to take ownership of group problems and manage interpersonal conflicts and the decision-making process.

Here the strategy proposal aims to address the central theme of Chinese students adapting to a Western education pedagogy with a student-centred educational idea. Empowering students was a focus of changes made to the 2014/15 iteration of the AR Phase of this research. Citing Kuh et al. (1997), Liu et al. (2013:67) suggest that by granting students a measure of equality, more

proactive communication with teachers, rather than '*learning based upon fear and blind following*', will occur.

Having attempted to convey this message of empowerment, the experience from this research is that, as might be expected, some students get the message, while others do not. Those that do not, continue in demanding more teacher-centred approaches, as demonstrated through the DM emails. Among those that feel empowered, some respond positively, embracing the perceived freedom, while others, perhaps for whom this represents a departure from their comfort zone, turn to criticism of the learning interaction, expressing a preference for a pedagogy where they might passively acquire knowledge from the tutor.

### **6.3.10. Develop a system of accountability**

**Definition:** Accountability, responsibility and positive interdependence, establishing specific policies to monitor and address social loafing and free riding, ensuring that both team and individual contributions are acknowledged and rewarded, and offering teams the option to dismiss uncooperative and unproductive members (Mello 1993; Jolliffe 2007).

Providing the opportunity, via face-to-face discussion or online platform, for students to communicate with tutors and other students to ensure that the project brief was understood and that expectations were managed, was found to be effective, with few exceptions. The conversation about how many hours to spend on the project and in preparation for learning interactions being addressed in all initial interactions. Advancing the conversation on expectation, rather than waiting for it to arise from the students, would seem to have contributed to the advancing and reduction in online communications as demonstrated in Figure 37 Chart summarising the nature of student group project communications.

Providing examples of work submitted, to help explain the requirements of the assessment have tended to lead to a copying strategy, to ensure compliance with expectation. The result being a reduction in creativity and design research in those

areas of the work where the tutor has explained a preference or an example of good work in that area. Such approaches may therefore be seen as counterproductive, if the aim is for the student to demonstrate critical design skills and decision-making.

This having been said, the tutor's view, as the assessor of the work, may also be seen as critical to success - taking the evidence-based design perspective on the issue, the tutor may be seen to represent a reliable source of information both contextually, since they set the limitations and expectations in the brief, and as a practitioner. So perhaps this form of behaviour should be expected and embraced. Publishing previous and anonymous coursework submissions, along with the mark they were awarded, may act as a useful guide. The more examples of previous coursework published, the greater the diversity of possible pathways to take. So rather than relying on one tutor's 'correct' answer, the student would no longer feel the restrictions, or security, of a specific and narrow pathway.

### **6.3.11. Small group classroom strategies**

#### **6.3.11.1. Introduction**

For small group classroom interactions, known as seminars at NUBS in China, strategies were identified during the SD phase of this study that would influence engagement both from focus group participant perspectives and from tutor practitioner experience.

Of the strategies proposed, six strategies were found to be effective in accelerating and promoting student engagement in seminars by addressing the themes identified in the GI phase.

#### **6.3.11.2. Question setting and signalling**

Letting students know in advance that they will be asked a question and so need to be prepared to answer, was a strategy recommended by tutors in this research, as an approach to ensure student's willingness and preparedness to respond.

However, when used in the AR Phase of this research, the approach led to mixed results.

It was argued by participants in this study that Chinese students required time to think in Chinese having translated the question raised in English, before translating back to English and responding in class. This need for longer response times was also identified in Mak (2011:212), where in addition it is argued that if waiting for a specific student to respond, if the tutor provides too long for a response, this leads to a negative impact on willingness to respond in English. Thus tutor coercion by silence has a negative impact on student performance. Yet it is also argued that to switch a question to a different student, when the first is non-responsive, also has a negative impact.

Strategies used in this study, to avoid this 'Catch 22', included:

#### **6.3.11.3. Group responsibility**

Here a group were asked to prepare a response to a question, given time to do so and then asked to present to the class. This aimed to avoid the singling out of a single student. This generally worked, but occasionally, if no action was taken at the initial stage to appoint a group spokesperson, the group would still fail to respond.

#### **6.3.11.4. Volunteer or pen spinning**

Again avoiding singling out a specific student to respond, and making the exercise group-based, these strategies were used to ensure a group knew who would be responding for the group. This helped avoid problems of group failure as above.

Volunteering sometimes presented a problem, where a general reticence to represent occurred, where a dominant student would volunteer preventing a sharing of the responsibility, or where peer pressure led to uneven presentation loads. Having identified this pattern, pen-spinning or sometimes the "paper, scissor,

stone” game was used as an ice-breaker and to ensure a more random distribution of responsibility.

#### **6.3.11.5. ‘Quescussion’**

Borrowed from EFL teacher colleague experience, as a general means of overcoming anxiety or reluctance to present ideas and the fear of losing face from incorrect answers in small group settings the approach of only asking questions in group conversations was tried, as an ice-breaker in new groups. This approach met with mixed success but, due to feedback on the research process was dropped in favour of the group responsibility approach.

#### **6.3.11.6. Developing reflective practices**

When providing weekly feedback in lectures, on online interaction performance, many students, recognising the tutor focus discussed in the literature, found it humorous that so many of their contributions (14%) referred to the tutor to support a view on decision-making. That students were able to tie in the literature to their individual and group behaviour firstly helps support the literature that identifies such learning preferences and secondly demonstrates the positive effect of reflective practices in learning.

Not unlearning what they know, or changing their cultural norms, but recognising themselves, their environment, their coping responses and the impact of these phenomena on learning outcomes.

Reflections in the project coursework, both on systems design and on project management, also provided several useful insights into how students valued their own knowledge and experience as enabled by taking the evidence-based approach to their research – Practitioner experience being explicitly cited as a source of evidence in support of decision-making.

### **6.3.11.7. Tolerating silence**

Tutor intervention delay both in face-to-face and online interactions would seem to be effective as a strategy in promoting, or at least providing space for, student empowerment.

Having explained and highlighted Chinese student preference for silence in the early interactions relating to focus group design, students became more aware of the cultural preference. It became possible to make light of sustained silence in the classroom context – this was not an individual failing, but rather a cultural preference. Reflection in coursework on this phenomenon also helped demonstrate this increased awareness.

The challenge to the tutor in permitting silence in classroom discussions is gauging when to intervene and how to intervene. While it should be recognised that each tutor will have their own characteristic/skill set in working with group discussions, and each group of students will have their own mood / preference at the time of the interaction, this particular tutor found that a pause of 20 seconds was generally sufficient for most groups to contribute. Delays beyond that may, as suggested in the literature (Ha and Li, 2012:245), have negative impact on the atmosphere of the interaction.

## **6.3.12. Small group project strategies**

### **6.3.12.1. Introduction**

In all, this research contains feedback on five different project design approaches, three of which were tested experimentally. A different design being implemented in each iteration of an annually delivered undergraduate module. In each study, the aim of the project was for students to solve a strategic alignment problem involving the research and design of an appropriate information systems to meet the needs of an organisation.

#### **6.3.12.2. 2010/11 Case study**

In this first iteration, prior to the investigation in this research, students wrestled with a case study text, spending more time in coming to grips with the context in which the study was set, than in addressing the desired learning outcomes of the module, due to the unfamiliar backdrop of the case study. Since the case studies made available through the Ivey Business School agreement with UNNC were set in the business context outside of the experience of the Undergraduate students taking the module, the case study approach was found inappropriate in the given context, supporting the arguments made by Starkey and Tempest (2009). A new approach was therefore sought that would enable students to address the desired learning outcomes of the module without issues of contextual experience.

#### **6.3.12.3. 2011/12 Student designed case study**

In the second iteration, trying to reduce this focus on context of the case study, students were initially tasked with setting the context for the organisation to be used in their project. Initially this seemed to work well, but later, students began to recognise that the user needs within their imaginary organisations were ill-defined and that this level of detail would be needed in order to argue for an appropriate strategy for that organisation.

#### **6.3.12.4. 2012/13 Problem-based learning with mixed research approaches**

In the third iteration, the context for the problem was set as the students' own context. Furthermore, groups were allowed to choose their own 'accountable' transaction for their study. This led to more enthusiastic approaches and enjoyment of the project but gave rise to concerns about over-investment of time in the project. However, student concerns over context were no longer present and reflection on the nature of being a student and learning to learn started to mature.

#### **6.3.12.5. 2013/14 Problem-based learning with an evidence-based design approach**

In the fourth iteration of the study, having found the problem-based approach with a familiar context to be so effective, the evidence-based approach to strategic accounting information systems design was adopted as the only approach for student projects. This approach was found to highlight the importance of the students' own experience in experimenting with variations in systems designed to align to their user needs.

This approach was found to improve both the students' sense of empowerment and the extent of their reflection on their own impact on both the system design and project progress.

#### **6.3.12.6. 2014/15 Problem-based learning with an evidence-based design approach and split submission**

In the final iteration prior to the submission of this thesis, more emphasis on project management and evidence-based approaches to scoping both design alternatives and academic literature were added to the early teaching and learning interactions.

The impact of the split submission led directly to the advancement of the discussion needed to complete this early stage of the project. This need to make design decisions early on prevented early procrastination which had been exhibited in previous iterations. Some reflections in SEMs from this iteration suggested that students felt forced into decision-making before they felt ready to do so. This may indicate a need to provide more initial guidance on these early decisions.

The return to online collaboration as an incubator for end user dialogue regarding both user need and evidence sharing to support design decisions proved effective with a motivation of 17.5% of the mark for the module. Follow up focus groups suggested that 15% would be sufficient as a motivation and would allow resources to be committed to the written aspect of the project. This having been



said, the overall effect of the contributions made to these discussion groups and the evidence shared as a result, was positive and appreciated by the students.



## 6.4. Reflection on discussion

In summary, Li and Campbell (2008) recommend that *'both lecturers and Asian students accommodate classroom and pedagogical changes, are willing to cross each other's cultural borders, and finally adopt a win-win approach to achieve each other's goals'* arguing that *'It is ethically inappropriate to require international students to change, while lecturers stay put'*. Which is all well and good yet these students (or their parents) have chosen to study in these different academic environments, one assumes for the reasons of their difference to those available within the mainland. If these differences include such differences in pedagogy, then this decision may be undermined.

Taking the view of group work as a two-edged sword (Baker and Clark, 2010) with potential pitfalls if wielded ineptly, including it in the design of teaching and learning interactions would seem to be more useful to the student than avoiding it as a learning tool altogether. However, taking on board the proposed remedies of Li and Campbell (2008) to the problems identified in their research, along with other evidence from this and other research and practice in the field, caution and reflective practice would seem to be pertinent when wielding such a tool as part of a teaching and learning strategy.



## 7. Conclusions

*"Though the uncarved block is small  
No one in the world dare claim its allegiance.  
Should lords and princes be able to hold fast to it  
The myriad creatures will submit of their own accord [...]  
And the people will be equitable, though no one so decrees.  
Only when it is cut are there names"*

Lao Zi in Leezenberg (2005:13)

### 7.1. Introduction

In the previous chapter, the analysis of the themes arising from this research has been brought together with the most recent available findings from other research in similar contexts.

As noted in the literature review, due to the unusual nature of the context of this research, a British university business school set within China, there would appear to be little research conducted in the same or similar contexts. However, as highlighted in the previous chapter, there are some strong similarities to the experiences reported in teaching and learning in non-Chinese universities with Chinese undergraduate students in attendance. Thus, the data arising from this study may be seen to support the theories developed in previous research in these different contexts, the same actors, but on a different stage. However, it is the difference in the data and emerging themes that may be of most interest, allowing these existing theories to be extended. Do these slight differences – the positioning of a western university within China, or the ratio of Chinese mainland to non-Chinese mainland students – make a significant difference to actor performance?

This chapter is structured as follows. First, in a review of the thesis, the research objectives are restated before, the methods chosen to address them are critically examined referring again to Basden's (2011:486) proposal for the integration of interpretivist and socio-critical research. Then the thematic discussions developed in the previous chapter, relating the themes emerging from this research to the

literature, will be concluded by relating them back to the main stated objectives of this research.

The implications of these research findings in strategy development, as supported by the experimental testing in the AR Phase of this research, and in their relationship to research from other contexts, are then explored. Limitations inherent in this research are then recognised before recommendations for further research are proposed, before some final reflections are made at the end of the journey.

## 7.2. Research project review

In this section, the research objectives are restated and the design decisions made in achieving them, the approach taken, the underlying philosophical assumptions and methods used, are evaluated.

### 7.2.1. Objectives

This thesis has set out to address one central question in the given context:

“How can small group interactions be designed to improve student engagement?”

In order to address this question, the research was divided into three phases, each of which addressed one of three interrelated sub-questions:

1. What influences engagement in small collaborative groups?
2. What strategies can be developed to address these influences?
3. How, why and what would be good practice in implementing such strategies?

### 7.2.2. Evaluation

In this section, the decisions made in the design process and execution of this research project are evaluated by reference to the summary of principles for interpretive field research presented by Klein and Myers (1999), a validation approach also taken by Heinze (2008). While the work of Basden (2011) was also considered in guiding this research, that of Klein and Myers was found to be more practical in its application. This 7 part framework was applied in consideration of each phase of the research as follows:

#### **Principle 1 Hermeneutic Circle**

**Definition:** All human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form.

**Evaluation:** The iterative and reflective nature of each phase of the research – the Grounded Investigation Phase, the Strategy Development Phase and the Experimental Testing Phase to test any impact arising from the application of such strategies in practice - is reflected upon throughout the work but particularly in the

overall design of the project, as discussed in section 4.3.2 where the process model is explained. This iterative nature is in part driven by the process design but is also a reflection of the inherent iterative nature of the teaching and learning interactions under investigation, both annually in the academic cycle and in the communication interactions between teacher/facilitator and student/participant during the process.

## **Principle 2 Contextualisation**

**Definition:** Requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged.

**Evaluation:** As might be expected from an evidence-based approach to design, the contextual implications have been explicitly identified in this research, indeed it might be argued that the contextual differences of this research are what make it most 'interesting' (Davis, 1971). Design considerations in the application of both teaching strategy and research strategy have been sensitive to contextual differences, for example in the need for inclusion of cultural insiders in all aspects of the research design and execution (Watkins-Mathys (2007), Kaigler-Walker and Gilbert (2009)).

As has been demonstrated in this work, small contextual differences, where taking the same students in two different contexts - business school classes and language classes - the themes identified were different (Section 5.5.5.3). The impact of these minor contextual differences and the dangers of generalisation as discussed in section 4.2.2 are seen as important considerations in this work.

## **Principle 3 Interaction Between the Researchers and the Subjects**

**Definition:** Requires critical reflection on how the research materials (or "data") were socially constructed through the interaction between the researchers and participants.



**Evaluation:** The nature of the interactions in each iteration of both focus group discussions and small group discussions was explored in section 4.3.2 as the researcher/teacher switches mode between facilitator and collaborator (Baskerville and Wood-Harper, 1998). While the nature of the relationship between student and teacher could not be avoided in this context, having embraced the notion that cultural insiders should have a direct impact on the research design, the line between researcher and participant was, by design, blurred where possible. Examples of this being the separation of two streams of analysis of the data in this research, one by the participants and the other by the researcher, and in the granting of complete control to students over the design and execution of their own focus group interactions, the results of which were exhibited in their coursework. That the researcher was also the teacher and had explained a starting framework for how such focus groups might be designed, is of course also important to recognise, both from ethical and research standpoints.

#### **Principle 4   Abstraction and Generalisation**

**Definition:** Requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical, general concepts that describe the nature of human understanding and social action.

**Evaluation:** The discussion chapter of this thesis draws together the themes arising from the analysis of data collected in this project and, supplementing the literature used as a foundation for the work, ties them into the most recent research into the various themes that emerged. This enables the similarities and differences between the discoveries made in this project and those made in different but similar contexts to be identified and reflected upon, adding to the frameworks already identified in that work.

As in qualitative research projects conducted across the disciplines, challenges in dealing with an extensive and varied data set, with little or no predefined

structure and a requirement to document rigor in the approach taken to the analysis, became clear in this research (Conboy et al., 2012:115).

Assessing the generalisability of the resulting research findings and contribution to new theory remains an important theme in IS research (Conboy et al., 2012:115). However, as discussed in section 7.3.5.6, the 'evidence' in evidence-based approaches, refers to the 'best' available 'scientific' evidence from practice (Rousseau and Mc Carthy, 2007), and the decision over what is 'best' is one that is taken by the person discovering the research (the decision-maker), not the researcher of that evidence.

The notion of the *caveat emptor* disclaimer (Guba and Lincoln, 1989) speaks volumes about the dangers of blind generalisations – blind since assertions about generalisation are made without knowledge of the contexts to which decision-makers may seek to apply them. In this research it is therefore argued that clear product labelling is the way forward, so that the decision-maker can assess the relevance of a research finding to their own context for themselves, rather than vice versa.

## **Principle 5   Dialogical Reasoning**

**Definition:** Requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings ("the story which the data tell") with subsequent cycles of revision.

**Evaluation:** This principle can be seen to affect the design not only of the research project, but also the structure of this thesis. Avoiding contamination of the data by the researchers own preconceptions – as far as this might be achieved – is a goal of the grounded researcher. By design, the first data analysis to be conducted in this project was conducted by the participants in the research and then the 'cultural insider' research assistants engaged in the project. There were still examples of researcher impact though, even in the earliest stages, where a

theme emerging from student feedback in LCF meetings 'Participation' was seen by participants to be out of focus and in recognition of this the term was substituted by 'Communication'.

Even prior to that, as reflected upon in section 2.1, the researcher had been exposed to the IS literature and other literature related to themes concerning philosophy and methodology. It was at this early juncture that the researcher realised that while he needed to fully understand how to design and execute a research project, he did not need to engage in theme related literature until it came time to discuss the themes emerging from the analysis of the data.

This thought was in some ways re-enforced by the need to change direction in the central research objectives towards academia from business practice. Each iteration of the literature scoping and review, which exposed the researcher to the findings of the research of others, has been detailed in section 2.2.

*"The data, the process will lead you, if only you will follow"*

[Bloomfield \(2013:178\)](#)

'Allow the data to speak' was the advice given by the researcher's colleagues and supervisors as the researcher analysis section (5.4.3) became the focus of attention and it was not until the GI and SD phase sections of the Analysis chapter had been drafted that the iterative scoping of each theme identified commenced. This approach is seen as a potential pitfall for the novice researcher, since it increases the potential for failure to embed the research into the frameworks proposed in extant literature (Locke, 2015:616).

Thus, it might be argued that the researcher, while taking a risk that the analysis of themes emerging from the data might not bed well with previous research, has taken many precautions to ensure the data can speak without too much of his own accent. However, the findings from the first two phases, as were within the control of the researcher to alter, were then carried forward to the AR Phase, enabling the

strategies proposed in this research to be tested in a new context to that covered in the literature.

By comparing the frameworks developed in this research to those developed in other contexts, differences and similarities emerge. This comparison and the experimental testing of the results developed through the first two phases of this research, may be seen to demonstrate the extension of existing theory and the practical application of the new, contextually sensitive, theory that has been developed.

As argued by Eisenhart (1989), qualitative researchers can generalize from empirical observation by developing new themes and propositions as a way toward theory building, contributing to existing theories that apply to the phenomenon under investigation. In this research, while no contextually identical theory was identified, strategy proposals arising from the extant literature, in relation to Chinese student behaviour in foreign university contexts, were taken as frameworks for comparison, enabling new insights to be recognised as the theory building contribution of this research.

## **Principle 6 Multiple Interpretations**

**Definition:** Requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if all tell it as they saw it.

**Evaluation:** As reflected in section 5.4.3, during the Researcher analysis, such differences in perspective were often encountered in comparing the data outputs of different groups. Sometimes these themes were grouped together, sometimes they were separated. Opposite perspectives on the same phenomenon were coded separately, but these were rare. Many differences, being similar but oblique, particularly in the GI phase of the project, were coded separately.

In the case of focus group data, such differences were first captured in the individual questionnaire, then resolved through the group discussion. As in the example of the preference for single gender groups, there was significant difference of opinion in one focus group.

In the analysis groups, the participants had been present during the GI phase focus groups, and so were familiar with the intended meanings of the themes that the participants had named and defined. However, differences were soon exposed as we moved into the SD phase of the research where the findings of previous focus groups were analysed by groups tasked with strategy development. To assist in these processes, sometimes the definitions of terms needed to be clarified and SD phase participants needed to wrestle with these definitions before engaging in the primary focus. For this reason, SD phase focus groups tended to overrun their intended duration.

### **Principle 7 Suspicion**

**Definition:** Requires sensitivity to possible "biases" and systematic "distortions" in the narratives collected from the participants.

**Evaluation:** As suggested to researchers undertaking research in China by Stening and Zhang (2007:136), a multi-method approach was taken in this research, to enable findings to be compared and thus bring any such bias or distortion to light. In this research a wide range of different methods and data streams, from individual questionnaire and group discussions and tasks to group reflections and individual communications during the research process, contamination of data from each method, by researcher influence or respondent agenda, might be better recognised.

Indeed some such activity was recognised in the individual questionnaires of a participant, where a change agenda, in respect of a tutor engaged in a different

module, emerged. The follow up interview in this case led to the feedback being moderated by the participant.

In addition to this multiple staged, multimethod and iterative approach, the use of video capture and cultural insider observation to try to detect communication distortions, like sarcasm implying the opposite meaning to the spoken word, was employed (Watkins-Mathys, 2007:209).

### **7.2.3. Reflection on research project review**

From this evaluation, it is reassuring to note that each principle of interpretive field research presented by Klein and Myers (1999) has been considered both in the design processes and in the execution of this research project.

The results of the GI and SD two phases of this research were also presented as part of a PGCHE group project in December 2012 and were recommended for a letter of commendation 'for a well-structured project which demonstrated clear application to a particular context' by the HEA review panel. This not only helped validate the approach taken but also raised the confidence level of the researcher who, like the students he teaches, had need of such positive reinforcement.

Having argued validity, through this evaluation, in the following section, the key research findings are presented.

## 7.3. Research findings and implications

*"Does their research support the existing theory, does it advance the theory in some meaningful and important way, or does it refute the theory?"*

Anfara Jr. (2008:872)

### 7.3.1. Introduction

In this section, the findings from this action research are detailed. Those that relate to the three main research sub-questions are presented first, followed by a discussion of the broader implications for Information Systems education and management.

### 7.3.2. What influences engagement in collaborative groups?

This research identifies a broad range of themes that influence student engagement in collaborative groups held within the context of undergraduate IS studies at NUBS in China. While these themes have emerged from a grounded approach to exploring a phenomenon of poor engagement in this context, the majority of these themes have been reported in the literature from many different contexts relating to the behaviour of Chinese or Asian students at Western universities in nations from New Zealand and Australia to the USA and United Kingdom.

A significant contribution of this research may therefore be seen as the confirmation that the findings relating to Chinese student engagement in western educational institutions in western contexts also apply in such institutions in the context of this study set within mainland China.

In accordance with the literature, the most significant themes to emerge in this research were those relating to insecurity/comfort in second language use and a preference for silence in group interactions - seeing these interactions more as an opportunity to learn, than a reason to contribute. Further reflections on this topic are included in Appendix A.

This research suggests clear differences between the factors influencing the engagement of students depending on their learning focus. The comparison made in this research being between IS education and third language education of the same students. This difference would also seem to be explained by the perception of language as a barrier to communication, rather than the language being the learning focus itself.

In relation to the extant frameworks of factors influencing engagement in similar contexts, all the key findings are also identified in this context. In addition, factors relating to perception of greater control over learning interactions are identified in relation to interaction timing, physical environment and pressure to alter pedagogy.

### **7.3.3. What strategies can be developed to address these influences?**

*"We've got to accentuate the positive, eliminate the negative, latch on to the affirmative, don't mess with Mr Inbetween"*

Crosby et al. (1944)

At the University or campus culture level, the literature would seem to suggest that strategies to support acculturation and attaining a level of competence in language use and interpersonal skills address the most critical areas. Ensuring that recruiting processes identify the requirements of learning in the teaching environment of that university culture would also seem pertinent.

However, such strategies would only seem appropriate where pedagogy developed in one context is to remain unaltered. The alternative, to adapt pedagogy to suit the learning preference of the student, would require such adjustments to be made, across the board, at the classroom level.

At this classroom culture level, if the use of small group interactions is to be maintained, the proposals to compromise the pedagogy by reducing the requirement for students with a non-communicative approach to learning would seem to be self-defeating. The focus therefore would seem to be best placed on



assisting student acculturation to these pedagogies and this is where this research has sought to gain an understanding.

As discussed, the strategies discovered in this research map well to those proposed in the literature, the general emphasis being to explain to students not only the how, but the why of the teaching and learning interactions. Setting the tone of the learning interactions early on and consistently by presenting, discussing and emphasising:

- the expectations and role of the tutor,
- the learning objectives and their relevance,
- the learning pedagogy and the requirements of this way of learning,
- the different cultural approaches to learning,
- the importance of reflection on learning and in evidence-based practice,
- the empowerment and responsibility of the student,
- the splitting of the submission of the project into logical stages, and
- the provision of sufficient motivation and opportunity to communicate with other students, groups and cohorts about their project decisions.

At a group project or task level, setting the ground rules for the interaction, facilitating the breaking down of barriers to in-group and in-class communication by adopting techniques and technologies that make a game of the process, but not the learning, to enable working relationships to develop as groups learn to work as teams.

Recognising the need in group and class interactions to tolerate silence, allowing longer for responses and discussing and nurturing an awareness of cultural difference that may impact on these interactions, during those interactions.

At the student level, recognising that there are different motivations and expectations between individuals and continuing to reflect and adjust to try to meet these differing needs during these interactions.

At the tutor level, the research outcomes of this research have informed and been informed by the designers of the induction processes of NUBS in China and, through presentation and discussion with teaching practitioners / colleagues,

helped to add to the local conversations as faculty members continue in the iterative testing and adjusting of their interaction designs.

### **7.3.4. How, why and what would be good practice in implementing such strategies?**

#### **7.3.4.1. Introduction**

In this research the strategies identified in the GI phase of the research, as relevant to the design of the module used, were applied in the AR Phase, to enable their impact to be tested.

In the following section, conclusions are drawn first from the small group classroom and small group project strategies discussed in section 6.3, before the implications of this research, for enhancing information systems evidence-based teaching practice and towards innovation in research design more generally, are presented.

#### **7.3.4.2. Small group classroom strategies**

Much in the same way as for projects, defining the nature of a discursive interaction in terms of duration and expected outcome (for instance who would be representing the group and how), also led to more engaged communication during seminars.

Ice-breakers, as a device to increase group member familiarity and a relaxed atmosphere, were found to have little value, unless they were also relevant to the learning outcomes. However familiarity with group members was highly valued in group interactions and long term groups reported the use of social interactions, outside of the learning environment, to help support this development of familiarity. While discussion groups were initially based upon random groupings, it soon became clear that by seating students in their longer term project groups, for discursive seminars, enabled conversations to develop much faster, in main part through the development of group familiarity. By changing this approach to selecting discussion groups, the importance of motivating inter-group

communication, as a means of cross-fertilisation of ideas for group projects, became more relevant.

Allowing students to switch to first language, where this was shared, led to faster and easier engagement in solving discussion problems, but, as discussed, this may have negative impact on student ability to engage in such interactions in their second language.

Silent spaces in discussion need to be tolerated in second language interactions and, in the Chinese cultural setting, embarrassment of student either in class or individually should be avoided by seeking an alternative way to engage. For instance, avoiding individual stigma by engaging a group as a think-tank to inform the individual's contribution.

Creating ownership of group contributions of the class, by recording their contributions on whiteboards in class, or online bulletin boards outside of class, seems to engage students in greater dialogue and not only empower the contributor, but to act as a badge of achievement from their activity coupled with a greater perception of ownership of the T&L process.

#### **7.3.4.3. Small group project strategies**

In this research, increasing student reflection on both their learning approaches as influenced by individual and cultural characteristics and in the value of an evidence-based design approach, was found to positively affect small group learning interactions and outcomes both in terms of the assessed work produced and in student satisfaction with the interaction learning outcomes.

Splitting assessments into logical staged submissions reduced the time spent by students in addressing key design decisions in their projects, thereby reducing procrastination and over-investment of time resources in group projects. Focus needs to be placed on preparing students for the early group decision-making processes, when these are artificially accelerated in this way.

Motivating online contributions to inter-group communications was found to require more than 10% of the overall assessment mark. Participants in this research suggested that 20% of the overall mark would be required, yet this research demonstrated a significant improvement with 17.5% of the mark awarded, when coupled with an emphasis, by the tutor, on the value of such contributions and collaboration to the evidence-based decision-making process. Finally, the participant proposal in the latest iteration of this study proposed that a reduction to 15% would be appropriate for the next year.

Adopting the evidence-based approach to strategic systems alignment made a significant difference to the overall sense of empowerment among student participants, by recognising value in their own experience and perspectives. However, there was still a large proportion of tutor focus among the contributions made to the online community – so this must be seen as work still in progress. This aspect of the research finding is of interest also since it may be seen to represent a paradox in academic/practitioner communication. In practice, practitioners have tended to make decisions without reference to academic evidence. In academia, in the Chinese context especially so, Chinese students place little value in their own experience in informing their design decisions.

The commitment to hard working among students engaged in these projects is a valuable characteristic but has been found to contribute to an over investment of time in the project. This despite focus on the need to control time spend during the project. At this stage, the view on how to address this problem leans towards a shortening of the project duration. This would reduce the opportunity for over investment – so this again must be seen as work in progress.

As discussed, this research does not seek to argue that its findings are appropriate for generalisation, but rather to present the evidence to enable decision-makers to decide whether or not it is relevant to their given context - this view being consistent with the evidence-based approach to design. This having

been said, the work may be seen to contribute to both theory and practice as discussed in the following sections.

#### **7.3.4.4. Enhancing IS EBT**

The iterative approach to teaching and learning process improvement, adopted in this research, contributes much needed evidence to support EBT practices in this context. This research has also emphasised the importance of contextual difference in the learning focus of the teaching and learning process, particularly in respect of third language education.

The positive impact on the reflective practices of students, by requiring them to take evidence-based approaches and to explicitly reference their own learning experience and insights, makes a valuable contribution to information systems education and perhaps would also prove of value in other fields. This particularly so in cultural contexts where student valuation of their own experience or insights are low. Such realisation by students of the value of their own insights, contributed to earlier and more reflective engagement as the progressive iterations adjusted to increase focus on these aspects of the module.

By involving students in the design and redesign of the problem-based project, the expectation gap between tutor and student in this research may be seen to have been controlled in each iteration (Zhou et al., 2008). This having been said, student expectations may be seen to vary between cohorts and on the individual student level. As with the field of IS alignment theory, alignment of tutor and student expectation must be seen as one of continuous change and therefore in need of constant monitoring and review. The approach taken in this research of conducting student focus groups to elicit feedback on current perceptions and redesign proposal enabled the issues arising in expectation difference to be addressed in subsequent interactions and by changes to the information and services provided to support student progress through the semester.

These contributions are also relevant to the extant literature relating to the engagement and cultural adaptation of Asian students to western pedagogies, enhancing understanding of management education in information systems, particularly in respect of mainland Chinese students in institutions where Western group problem-based pedagogies are adopted e.g. Li and Campbell (2008), Gram et al. (2013) and Blasco (2014).

As an individual case study, this research may be seen to contribute to the call for case studies that "lionise" evidence-based design and avoid the contextual challenges of case study approaches e.g. Starkey and Tempest (2009) and Wastell (2011).

Through publications arising from this research, a further contribution to be made will be to inform recent and growing concern for making teacher knowledge and practice public, as a way of enhancing teacher competency e.g. Wong (2014:78) and, in relation to China-UK alliances, Li et al. (2014).

At a local level, this work has already contributed by providing further evidence each year to inform both student/staff induction processes and will now add to the body of research on the design of teaching and learning practices at NUBS in China e.g. Waters (2007). In addition, a preliminary year module, supported by NUBS in China and aimed at supporting students in their transition to studying at the University, is strongly informed by this research. This answers the call for further application of evidence from the process of adapting British teaching and learning practices for use in the Chinese undergraduate context e.g. Zhou et al. (2008).

#### **7.3.4.5. Innovative research design**

This research makes a contribution towards the enhancement of research practice – the design of the research process itself - most particularly in pedagogical research design, but also by extending the vision of Hidalgo Landa et al. (2011) and his proposed evidence-based literature scoping technique, to include in those processes the people most affected by these design decisions – the students.

The approach taken in this study draws from the experience of researchers that have gone before and, through the learning derived from those researcher's experiences, takes an approach that harnesses best practices. By combining these insights, this research contributes an approach that has been applied by a cultural outsider to a context and culture beyond his comprehension.

The use of focus groups and the participant preference for the mapping processes adopted in this research, as a means of developing an in-depth understanding of a phenomenon, were also seen as an appropriate approach in the Chinese context (Kaigler-Walker and Gilbert, 2009). The iterative design of each focus group interaction, was also the product of such cultural insider input.

The cultural insiders available to support this research included both students and tutors, but perhaps it needs also to be highlighted that some of these cultural insiders were also participants. Feedback from each iteration informing the design of those that followed. Perhaps such involvement is only of value to researchers if engaged in studies of durations or iterations similar to this study. However, the value of such insights was seen as valuable in its contribution to the design of the research overall.

Since one of the aims of evidence-based studies is to address the communication divide between academic and practitioner (Figure 44), perhaps involving focus groups participants in literature scoping is one way to raise practitioner awareness of relevant studies to their context. Thus, in the same way as students and tutors expressed high levels of utility for the focus groups in which they participated for this study, practitioners would take away a greater sense of relevance and value of academic contributions to practice.

This research may therefore be seen to extend previous approaches to research where western approaches are conducted in non-western contexts. While relevant to quantitative studies, in so far as they should be founded through qualitative insights (Kaigler-Walker and Gilbert, 2009) this research contributes directly to the

development of qualitative research methods and the adaptation of western approaches to Chinese contexts.

For the literature review, the study extends the evidence-based approach to literature scoping by combining the work of Hidalgo Landa et al. (2011) with the recommendations for the use of cultural insiders as proposed by Watkins-Mathys (2007). This led to one of the most productive and fun sessions, for researcher and participant alike, as the literature was scoped as part of a collaborative team effort.

### **7.3.5. Broader implications for IS education and management practice**

*"It is not the contemplated hypothesis alone that does the implying, but rather that hypothesis and a supporting chorus of background beliefs."*

Probert (1994:175)

#### **7.3.5.1. Introduction**

In the introduction to this thesis (Chapter 1), a fourth research sub-question was raised for consideration:

"What are the implications of these research findings for contemporary management education and the future development of managerial practice?"

Standing back from the main focus of this research, in the following section, current issues in management education are explored and the contribution of this research to the development of management training and future practice are speculatively considered.

First, the positioning, role and responsibility of the business school, as a centre of academic pursuit to inform business practice, is explored. The importance of research relevance to current business practice and the communication of knowledge derived from such research is then discussed, before a reflection on these three sections is presented.

Having examined the current state of play, the role of evidence-based management - an important consideration in current research and practice - the role and perhaps



responsibility of the tutor in evidence-based teaching, and the possible contribution that research practice, as proposed in this thesis, may make to both, are considered.

While measuring the impact on the future practice of students is not a direct aim of the project, such an impact may be seen as a desired and possible outcome. This impact is discussed in section 7.3.5.8 - Enhancing EBM through EBT.

### **7.3.5.2. Business Schools**

Over the last century, business orientation has altered significantly from focus on factors ranging from profit, production and product, to consumer, society and environment and the shock waves are still echoing around academia from the discovery that there is a world outside the organisation's 'fence' that affects and is affected by the organisation and that this world is dynamic, learning and bitter (Hines (1988), Lafferty and Hult (1999)).

Business school orientation may be seen to have altered in a similar way, from product to customer and the dawning of awareness of the implications of over emphasis in any one direction is perhaps one of the catalysts for dialogue over the role and identity of the business school (e.g. Pfeffer and Fong (2002), Starkey et al. (2004)). Pressures too, at both University and tutors/researcher level are high, on choosing the right balance between teaching and researching roles, both in the UK context and that of China, the context of this research (Lai et al., 2014:971).

As a result of this protracted orientation towards the customer, the quality of the product may be seen to have degenerated in terms of both research and training (Pfeffer and Fong, 2002:1500). To re-orientate themselves, Starkey et al. (2004) argue, that the business school needs to develop strategies pursuing knowledge for and about management and knowledge for and about society i.e. re-focus on product. Clearly this recommendation comes from the perspective of one that sees the business schools shift from university department to training organisation as being a step in the wrong direction. Perhaps another

recommendation would be towards taking a more holistic view rather than a return to such singular focus on one key driver.

Accepting the argument that the romantic notion of the university as 'a community of scholars and students engaged in a search for truth' may no longer apply to all stakeholders in the arrangement (Bedeian, 2007), the business school may be seen to play multiple roles, the relative importance of which would depend upon the perspective of the stakeholder (Pfeffer and Fong, 2002). To these various stakeholders, a business school represents the same means to different ends; a profit centre, a source of education, a source of competitive advantage, a source of answers, a source of employment or simply a protective cocoon.

In new businesses, particularly sole-proprietor start-ups, it would seem that little time is afforded to reflection on matters outside the core activity; 'fire-fighting' and meeting immediate needs take precedence (Garengo et al., 2006:28). It is only when decision-makers are able to raise their heads from the fray that they are able to focus and reflect upon matters outside these immediate operational activities.

In the field of information systems education, Mathiassen and Puroo (2002) recognise the need for pedagogy development to promote reflective practice among IS students.

*"I have no doubt that the more I reflect, the more I will plan new changes, and, when these changes are 'action in practice', I will again observe their effect [...] and reflect on what actions I should plan. I find this paradigm most natural. [...] It is [a] valuable tool for all of life and cannot be eliminated or reduced down to only one aspect or function. It offers a holistic solution to any research problem, since all of life includes the function of plan[n]ing, acting, observing and reflecting. I might add that the reflecting phase is probably the least used or the most neglected, and maybe, if we were to promote it as a part of thinking, we might see better resolutions to social issues and decisions."*

Lyttle (2003)

Perhaps then, the primary role of the business school is one which allows researchers to take a step back, both in terms of perspective and time, from the day to day running of a business, allowing time for reflection so that a more holistic understanding can be enjoyed and the bigger picture appreciated.

### 7.3.5.3. Research Relevance

*"knowledge-by-representation must be treated as indicative of open-ended tendencies—arrests in form and matter to what is a transient and ever-changing nature of the real business experience"*

Chia and Holt (2008)

As suggested by Hopkins and Swift (2008), to ensure relevance and to be able to take this view, researchers should interact with practitioners in establishing their research questions. Failure to listen to practitioners is seen by some to be the cause of detachment of academic business theory from practical business methodology and, thereby, a cause of lost relevance (A.A.C.S.B. International, 2007:17). However this relationship needs to be balanced if the institution and research is to be seen as independent (Pfeffer and Fong, 2002:1514). A concerning feature of existing research into the field of information systems, is that much has been conducted through the sponsorship of enterprise resource planning software manufacturers or by individuals who have used a case study approach where they themselves had played an integral part in the implementation process (Zhang et al. (2003), He (2004)).

### 7.3.5.4. Research communication

*'[W]ithout a constant misuse of language, there cannot be any discovery, any progress'*  
(Feyerabend, 1993:18)

In addition and as lamented in The Economist (2007), research findings are seldom read by non-academics but, for a research process to be of practical value there needs to be a continuing communication process between the business academic and the entrenched business practitioner. The absence of such a feedback loop within this interaction process must surely result in a risk of disassociation and loss of relevance.

Drawing from this, the loop may be seen in the form of:

1. publication of research in a practitioner-friendly business language.
2. publication of research in an academic-friendly business language for:
  - a. Academics in business research
  - b. Business practitioners who have been taught academic-friendly business language.

Taking this view, another and self-reinforcing role of the business school may be seen to include the training of students, destined for business, during which they learn academic-friendly business language so that they may not only read, but also communicate, in academic-friendly business language.

Yet it might equally be argued that business schools should be centres where academics learn practitioner-friendly business language, to broaden their readership or that a better place for business research would be within business rather than within academia.

If there has been a failure in the relationship between academics and practitioners in the business environment, perhaps then, as suggested in *The Economist* (2007), it has been one of translation. Taking this understanding on board and being a 'doubter' in their ability to use 'correct' English grammar (Humphreys, 2004:20), the author of this work, who believes in using good English, can only hope that readers of this work will forgive such grammatical errors and find the words chosen to be not only in a common tongue, but also find the subject engaging. Taking a step back from that hope, one might think that, if a research finding provides a competitive advantage, business practitioners would be prepared to engage in the translation exercise and find relevance in it to extract such value.

If there is value in a research finding, there may also be ethical considerations for researchers in disseminating this knowledge when creating barriers, in the form of subscription charges, to those that may benefit from it since such barriers restrict the flow of information in the 'virtuous cycle' (Tranfield and Starkey, 1998). The outcomes of this research include something tangible. Not only presentations to students and tutors engaged in the processes being investigated, but through feedback into the design of the induction processes in which new entrants to the context are engaged, thus aiming to provide the closing feedback loop in this 'virtuous cycle' of the research process.

Balancing the trade-off between providing an accurate model and providing practical tool for business practitioners would seem to be a complex matter that might be solved by renaming 'Limitations' as '*Caveat Emptor*' (B.B.C., 1999). However, if academic reputation is to be maintained in the business world, these limitations and dangers of misapplication of such knowledge, transferred from academic to practical contexts, need to be explored and given more equal billing.

Thus the extent to which the findings of research can be transferred to different organisations / trades / contexts – needs to be established before transfer from academic study to business practice can occur.

The dangers inherent in knowledge transfer, without regard to context, the associated knowledge of limitations, or appropriate application, may also place academic research in jeopardy, since they may undermine the academic foundations upon which literature reviewers build the cornerstones of their own developing research.

*"some commentators, ... either do little more than deploy samples of the more colourful terminology with no clear understanding of what its role is within the dense and difficult books which they have lifted such terminology from; or, where an attempt is made to engage with the material, display a poor or partial understanding of the works themselves. In fact, one could go so far as to say that there is a large body of material which cannot be seen as a serious attempt to engage with the subject matter."*

Appleby (2000:239)

Kaigler-Walker and Gilbert (2009:2) suggest that recent cross-cultural and intercultural research has tended to place too little attention in their writing on the processes involved in the development of their research instruments, and too much focus on their findings, thereby leaving their reader in the dark as to how the instruments were developed and conducted and, therefore, the limitations inherent in their findings.

These knowledge transfer hazards may be further compounded by a perceived lowering in standards of literacy and numeracy in university students (Humphreys, 2004:32) and an increase in numbers of international second-language students,

where contextual and syntactic differences in meaning may add to the misapplication or misinterpretation of research finding in their domestic context; a point echoed in (A.A.C.S.B. International, 2007:15). In addition, the adoption of field specific styles of academic writing, further broadens the boundaries between schools of thought, writer and reader (Mathiassen et al., 2012).

All this setting aside the issues of generalisation, when it is recognised that models and theories cannot simply be transposed, without due consideration and validation, to different contexts or cultures (Agourram and Ingham, 2003).

### **7.3.5.5. Evidence-based approaches**

The evidence-based approach to design is relatively new but, has slowly extended across different fields of study and today may be seen as an approach frequently taken in the information systems field. When the approach was introduced into health-care management, it was seen by some as a revolution in management practice and the improvement in results was seen as significant (Baskerville (2011), Pfeffer and Sutton (2006)).

The approach has since been adopted in nursing (Ciliska, 2005), architecture (Hamilton, 2004), transportation (Bones et al., 2013), software-engineering (Janzen and Ryoo, 2009), education (Rousseau and Mc Carthy, 2007) and more recently, to the field of information systems (Baskerville, 2011). Different names, such as evidence-based Medicine (EBMed), Practice (EBP), Design (EBD), Decision-making (EBDM), Management (EBM), Design (EBD) and Teaching (EBT), have been coined as the evidence-based concept has been tailored to suit each field of study or application.

In some fields the idea was perhaps not as new as in others since, as with many good ideas, the concept borrows from existing good practices (Baskerville, 2011). The concept appears to be simple - to improve design / decision / treatment, designer / managers / decision-makers should consider not only their experiential learning / intuition / instinct but also the best available 'scientific' evidence.

Recognising the impact of taking multiple sources of information in decision making, the race appears to be on to re-brand decision-making approaches to resolving challenges in many fields as 'evidence-based' or, as (Briner et al., 2009) put it, 'the proverbial old wine in new bottles and vice versa'.

One of EBD's main characteristics is the testing and experimentation approach of gradual change (Wastell (2011), Janzen and Ryoo (2009)), like an amoeba sending out pseudopodia to explore, sense, test and absorb that within its reach. Gradual approaches to system change, with many piecemeal structural changes, have been found to have extensive and often negative organisational repercussions (Miller and Friesen, 1983:221), hindering the integration of the overall system (Sun et al., 2001). However the cautious nature of EBD enables the retraction of that experimental 'false foot' and a rolling back to a previous state, without making a commitment to such change. This cautious nature comes at a price, but may be seen to act as an insurance policy against commitment to an undesirable course of action.

EBM is about managers incorporating not only their practical experience and insights, but also 'best available research' findings, into their everyday professional practice. Having recognised the issues of relevance expressed in the previous section, changing the practitioner landscape to adopt such practice seems problematic, but one way that it might be enhanced is by changes in the way information systems management is taught (Wastell, 2010:192). Although a mature field in the use of evidence-based decision-making, even in medical practice, it has proven difficult to translate evidence-based decision-making into practice (Miller and Forrest (2009) and Merijohn (2008)).

A review of the literature suggests that while China has engaged broadly, although sporadically, in the application of evidence-based healthcare over the past decade (Jiang et al. (2013) and Li and Zhao (2014)) and some language study research into EBT has been undertaken, little if any evidence-based research has

taken place in this context. Of the 96 peer reviewed journal articles scoped using 'China OR Chinese', 'evidence-based' and 'teaching' only 8 related to EBT outside of the health or linguistic fields. So it might be concluded that there is a lack of EBT research relating either to this general context, or to the specific small group interactions which are the focus of this study.

### 7.3.5.6. Evidence

The 'evidence' in evidence-based approaches, refers to the 'best' available 'scientific' evidence from practice (Rousseau and Mc Carthy, 2007), such evidence being garnered from both the experience of the practitioner and the fruits of academic study (Pfeffer and Sutton, 2006).

*"[M]aking decisions through conscientious, explicit, and judicious use of four sources of information:*

- *practitioner expertise and judgment,*
- *evidence from the local context,*
- *a critical evaluation of the best available research evidence, and*
- *the perspective of people who might be affected by the decision"*

Briner et al. (2009)

The integrated nature of these four sources of information is presented graphically in Figure 41.



Figure 41 The four elements of evidence-based management (Briner et al., 2009)



This same view of four sources of information or perspective is presented in health-care literature (Figure 42).

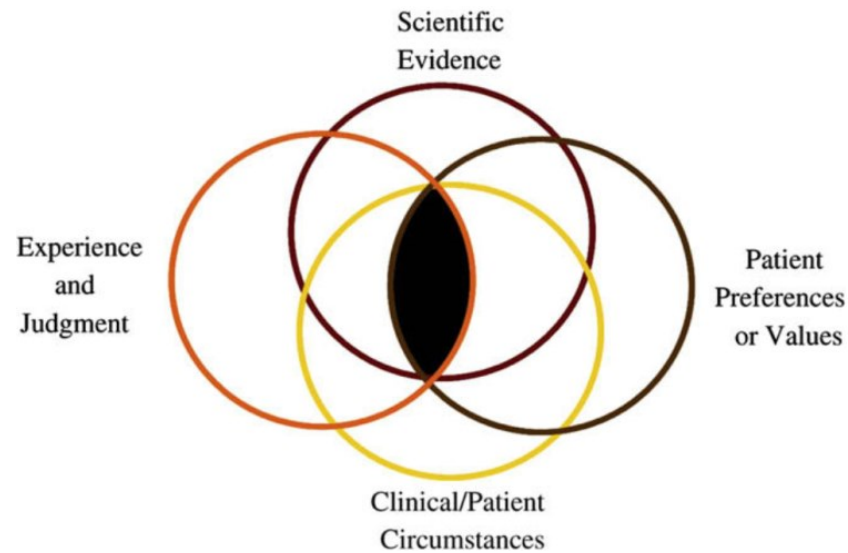


Figure 42 Evidence-based decision-making process (Forrest and Miller, 2009)

The Briner et al. (2009) map did not seem to sit well in comparison to its origins in medicine (Forrest and Miller, 2009) so, in adapting the evidence-based approach to the evidence-based design context, the figure presented below (Figure 43) was developed and seen as more appropriate, where the judgement of the designer and stakeholders, taken in conjunction with the product of 'scientific' research relevant to the context and problem, act as the guiding lens – the eye – of the decision-maker.

Here, the stakeholder judgement includes the perspective of the informed manager, if the manager is not the designer. Here, 'scientific' research includes research both from the specific practice as well as that from academic studies of other relevant contexts.

As suggested in Briner et al. (2009), the balance depicted in the map should not be seen to imply balance between these four types of evidence in design decision-making – this balance depending on the availability or cost/benefit of obtaining that evidence for consideration.

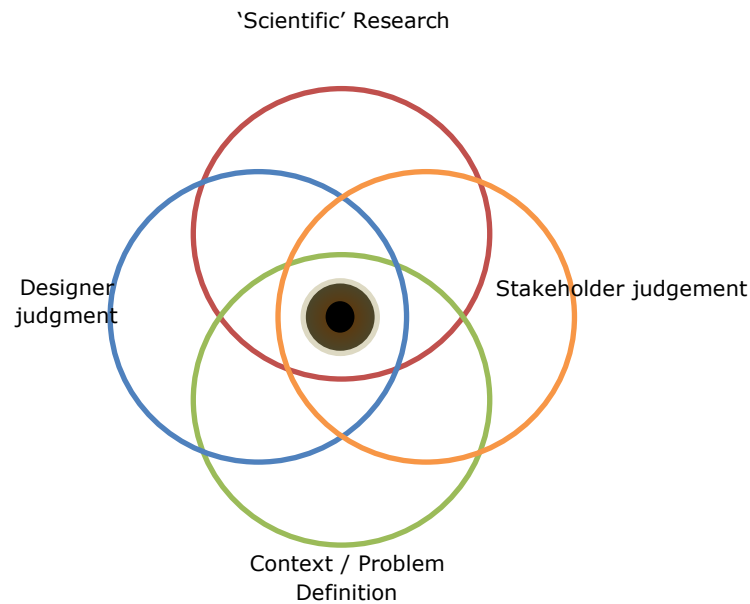


Figure 43 The evidence-based designer's lens

Some have argued that there is too much evidence, so that for practitioners to comb through the bank of evidence, for that relevant to their given context, is problematic and that those seeking evidence have often tended to latch onto evidence written in more entertaining and accessible ways than that which might be more relevant to their context (Pfeffer and Sutton (2006), Briner et al. (2009)). Thus, the importance of presenting our academic writing in a style that is practitioner friendly and accessible (See section 7.3.5.4), is once again emphasised.

As suggested by Seddon and Scheepers (2011:17), 'sound generalisations – providing useful insights to guide future practice – can be based upon knowledge claims from a single case study' (Walsham (1995), Yin (2009), Lee and Baskerville (2003), Markus and Lee (2000)) but, as argued in section 4.2.2, such generalisations in the literature require more reflection than has previously been afforded, both by the reader and writer, before their application in different contexts. Therefore the consideration of context in defining suitable evidence may be seen as significant.

Some would argue that 'best' evidence comes from quantitative studies enabling generalisations to be made from large volumes of data (Charlier et al., ND), others would argue that evidence should be context specific with as little generalisation as possible (Lee and Baskerville, 2003, Seddon and Scheepers, 2011, Sharrock and Randall, 2004), but perhaps both forms of evidence might apply to the problem being addressed and it would be up to the designer to choose the most appropriate sample/approach, based upon the question being addressed (Briner et al., 2009).

One problem identified in EBD is seen in a lack of a central bank, or repository for evidence, some proposing the creation of such (Janzen and Ryoo, 2009). In this information age, the importance of the role of the 'librarian', or banker, in supporting designers by providing accessible evidence has also been emphasised (Klem and Weiss, 2005). Goeken (2011:12) highlights more recent initiatives to systematise the 'body of knowledge' into such a bank, suggesting the Software Engineering Body of Knowledge (SWEBOK) provides encouraging signs of progress in this regard.

Some voices have suggested that there is still little evidence that the evidence-based approach is beneficial in the context of business management, others argue that this is may be true but that such research, looking in the right places, is needed (Briner et al. (2009), Wastell (2011)). An argument, that dependence on 'evidence' for decision-making would result in an historic perspective, thus preventing emergence of new ideas and perhaps resulting in an 'if it ain't broke, don't fix it' approach and stagnation, is countered by assertions that the nature of evidence-based approaches should be one of experimentation and the testing of new ideas (Wastell, 2011), but such experimental approaches come at a cost.

### 7.3.5.7. Evidence-based Teaching

*'[W]e need business cases which lionise EBM, rather than heroic or charismatic leadership'*

Wastell (2011:154)

As students progress through their studies at university, they move along a spectrum of subjects and develop and accumulate knowledge in the predetermined chunks designed and presented through the teaching staff. The inter-relationships between these chunks, or modules as they are termed at UNNC, is not intuitively systematic and a clear framework for relating them is not provided. As they move through academia and beyond and metamorphose from novice to expert, their knowledge becomes increasingly sophisticated yet contextually specialised and is organised in ways that "facilitate its accessibility and appropriate use" (Rousseau and Mc Carthy, 2007:92).

Education could provide a way for IS students to progress towards greater expertise by encouraging EBM and EBD and the development of more 'systematic and valid' mental models of professional practice (Rousseau and Mc Carthy, 2007:92). The evidence-based approach would then be directly carried into practice, on the shoulders of students as they graduate into that domain. Encouraging managers to recognise and approach decisions in a different way may be challenging, but raising awareness of information systems students to the potential of this approach is within the reach, and may therefore be seen as the responsibility, of a business school tutor (Wastell, 2011).

How best to convey this message? How best to roll-out EBM? A teacher of EBM should surely look to an evidence-based approach to teaching. However, some argue that management educators, unlike those in other fields, make insufficient use of evidence available to inform effective organisational practice (Rousseau and Mc Carthy, 2007:84). Over the past 20 years, concerns expressed about foreign educator quality in the teaching of western management practices in China have included their ability to alter pedagogy to suit the cultural background and context

of the students for which their teaching and learning interactions are designed (Lau and Roffey, 2002:5). This concern relates to the tutors ability to understand the nature of the context, to adapt or combine foreign theory to that context and the taking of a dogmatic approach to adaptation of western teaching practices (Lau and Roffey, 2002:5).

*'Many teachers fail to address these misconceptions because they believe the primary focus of teaching is presenting information accurately and clearly. What the students bring to and take away from their teaching is not the teacher's responsibility. It is only when a teacher shifts the primary focus away from what is taught to what students are actually learning that these misconceptions become a major concern.'*

Chew (2005)

Evidence-based teaching is an interesting field because it involves people that are both practitioners and researchers in the field. Interesting also due to the disagreements about key concepts such as definition and the ability to generalise evidence between contexts (Groccia and Buskist, 2011:8). This complexity and disagreement may well be explained by the differences, not only in context, the place, the time, the people, the baggage, but also in designer/researcher/teacher capability, experience and preference (Groccia and Buskist, 2011:8).

A wide variety of evidence-based teaching methods have been developed over the years (Table 36).

TEACHING METHOD	SOURCE
Computer-Aided Personalized System of Instruction	Pear (2004)
Just-in-Time Teaching	Benedict & Apple (2005), Benedict & Anderton (2004), Novak, Patterson, Gavrin, & Christian, (1999)
Reciprocal Peer Tutoring	Riggio (2007), Fantuzzo, Dimeff, & Fox (1989)
Problem-Based Learning	Duch, Groh, & Allen (2001)
Peer Instruction	Crouch & Mazur (2001), Chew (2005), Connor-Greene (2002), Connor-Greene (2005), Yandell & Giordano (2009)
Personalized System of Instruction	Keller (1968), Buskist, Cush, & DeGrandpre, 1991, Fox (2004)
Interteaching	Boyce & Hinline (2002), Saville et al. (2005)

Table 36 Varieties of teaching method (Saville, 2009)

While evidence-based approaches recognise the importance of the application of evidence to context, it is lamented that there seems little in the way of evidence to support approaches to teaching, some arguing that business schools require 'fundamental reform' of their teaching approaches (Baskerville (2009), Wastell

(2011:148-149)). Evidence-based teaching, looks to discover evidence to inform approaches to teaching that lead to improved learning and it seems possible that the internet may contribute to aiding this discovery, with web-based repositories of academic and practitioner evidence (Wastell, 2011:148-149). In the teaching and learning field, sites such as [www.teacherspayteachers.com](http://www.teacherspayteachers.com) are emerging and, in primary education at least, are proving to be a useful medium for sharing effective practice.

Fuelled by success, perceived in its application in practice, the evidence-based approach is a relatively new approach to framing sources of information used to inform decision-making. What is new is that, where decision-makers would normally look to evidence about the context and problem, relying then on experience of practice to inform decision-making, in the evidence-based approach two further sources of information are considered: evidence from the people affected by the change and 'scientific' evidence which includes evidence published in both academic and practitioner domains. This adoption of 'quadocular' vision also seeks to resolve the 'relevance' gap identified between academia and practice informing practitioners of latest research findings.

While some argue that the problem in the approach is not in finding evidence but in deciding which evidence is most useful, information generally comes at a cost, in terms of both cash and time. In academia, researchers may enjoy their university's subscriptions to academic research but in practice, this information cost may be seen as prohibitive. Traditionally, academia has been afforded the time to conduct research and while some may argue that the building pressures on the dual role of researcher and teacher are forcing academics into practitioner trenches, there are the privileged few who are still able to lift their heads to look around and to suffice the need to 'publish or perish'.

The role of teacher may be seen as one of showing the way and recognising value in the evidence-based approach to inform design and, recognising that

teaching is also practice, there is a building argument and demand that business schools should reflect on how this approach might be taught, redesigning teaching and learning interactions to promulgate the use of the approach through educating the decision-makers of tomorrow.

There is a mature body of work in the field of teaching and learning much of which is being repackaged as evidence, in support of evidence-based teaching. However, scoping this 'scientific' literature for evidence to support the design of EBT interactions, it emerges that there is little evidence of the application of EBT in the undergraduate programmes of business schools in China. However, there is a body of evidence developing about teaching and learning within this context, reflecting on contrast with traditional approaches.

Reviewing this literature and the other sources of evidence available in this study to inform this work, one might expect to see some form of balance between these sources. It should be noted therefore that, a review of the literature cited in this work reveals a significant imbalance towards academic publications. This is perhaps caused in this case by the perception that academic publications are of the higher quality and reliability, as might be expected in a PhD literature review, also conforming with recommendations that literature presented should be from higher level academic journals - as discussed in the literature scoping method section (2.2) - and also because, in the context of this thesis, the practitioners concerned are the academic and their student - i.e. those that publish academic literature.

### 7.3.5.8. Enhancing EBM through EBT

*"Only you can create actionable knowledge"*

Blood (2006)

Through increasing awareness of EBD in their education, one of the outcomes of this research may be the influence over EBM practice following graduation.

As highlighted by Baskerville in his EJIS editorial (2009:524) and argued in Wastell (2011:48), one of the important skills necessary for EBM is competence in independently acquiring knowledge derived from research. Tied with the perception of a gap between academic research and the practice of business, EBM may be seen as a way of building a bridge to welcome the academic researcher for inclusion as a stakeholder in practice. Better informed education of future business managers in EBM practices might help to ensure that such a divide is avoided in the future and that business decision-making is better informed as a result (Wastell, 2011:48).

Within the concept of EBM, evidence is researched by the practitioner to support a decision from practice and academic evidence sources. Practice is researched by academia and thus informs the evidence that emerges either directly or indirectly, depending on the research approach taken. The relevance gap may be seen in the lack of feedback from academia to practice which, as illustrated in Figure 44, is resolved within the EBM approach.

Within the IS field, the argument made by Wastell (2011) is that business processes are the result of management design – 'this is the way we do things here' - that the systems used to support those processes are the result of management design, and that the alignment of the one with the other is also the result of decisions made by managers, since it is they that must identify the decision-points that result in changes to the alignment between the two.



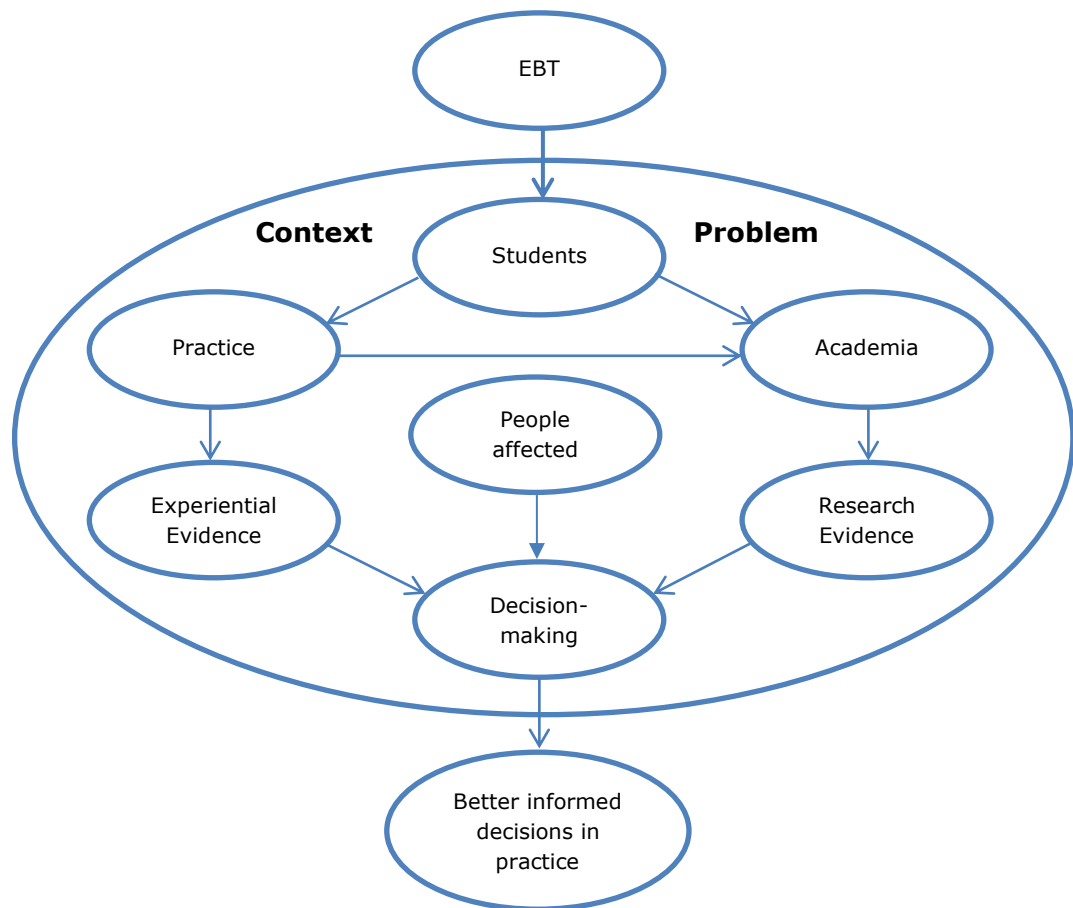


Figure 44 Addressing the relevance gap with EBT

Should business educators and institutions define their success based upon their student's ability to gain employment, or the student's placing of ethical practices above the financial interests of their adopting organisation? Giacalone (2007) compares this choice with the red pill/blue pill dilemma faced by Neo in the film "The Matrix". By tailoring our learning outcomes to suit the employer, are we feeding the machine?

As with ethical decision-making, the impact of EBT on the subsequent quality of decision-making in practice (Figure 44) might seem difficult to measure and it may also be seen as somewhat speculative to argue that EBT will enhance evidence-based management in future practice. One of the 'distal consequences' (Kahu, 2013) of EBT developed in this research, through improved student engagement in information systems education and their adoption of evidence-based research

practices in the learning environment, is the positive impact this learning will have on their choice to use evidence-based management, since these students would seek to apply their learning in the workplace, following graduation.

During the period of this study, interest increased in such applications of evidence-based management in information systems, to the extent that a new journal, the "Evidence-based Information Systems Journal", is now in its first issue (Evidence-Based Information Systems Journal, 2016). This journal aims to fill a perceived gap in the literature, by creating and using a robust evidence-base to inform effective research-practice interaction, educators and students (Edwards et al., 2014).

Such contributions would seem to have been called for not just by Blood (2006), who's paper title provides the opening quote for this section, but across the evidence-based IS and T&L literature, including Baskerville (2011), Wastell (2011), Groccia and Buskist (2011), Rousseau and Mc Carthy (2007) and Ahmadi et al. (2012). However, it should be recognised that while the opportunity to extend the use of evidence-based practice has been identified, it may take some time for graduates from such an educational system are in a position of management power and that current management may not have the ability to apply such management knowledge (Baldwin et al., 2011:587).

### **7.3.5.9. Reflection**

It would seem that the debate over issues of relevance and role (e.g. Pfeffer and Fong (2002), Starkey et al. (2004) and Bennis and O' Toole (2005)) bring into question the very right to existence of a discrete 'business' discipline. 'Business' is a term that covers a multitude of sins but where, as an academic discipline, does it start and where does it end? In their analysis of the nature of management research, Tranfield and Starkey (1998:345-6) lament that it is one with a fragmented identity, with no clearly defined boundaries or agreed framework. But

is this a good thing? As Don Juan, in Hines (1988) put it, *'do not confuse the boundary of the organisation with the fence – that is just to keep people out'*.

During a relatively short exposure to management research, the researcher has found himself needing to read across several disciplines and it would appear, from reviewing the literature, that such cross-boundary reference is not uncommon. This would appear to be in accordance with observations made by Tranfield and Starkey (1998:346), where they attribute this phenomenon to the positioning of management research within the social sciences.

The logical result of this need to cross boundaries, to capture the whole picture, is that researchers either need to become jacks-of-all-trades with an associated loss of quality, the time to deliver research may need to be extended when compared to single disciplinary research and/or the time taken to achieve recognition through mastery of multiple, discrete disciplines, may take longer (Tranfield and Starkey, 1998:346).

Yet it is difficult to keep up to date with developments in multiple fields (Carrell, 2010), so an alternative would be to engage in collaborative approaches to research, ensuring depth of knowledge in contemporary multi-disciplinary fields - not something the PhD student can typically engage in for their thesis. Therefore 'heroic individual endeavour' (Tranfield and Starkey, 1998:347) is the cross that the business school PhD student must bear as he heads off, moral compass in hand, to explore the furthest reaches of the business school's intellectual playing field, and beyond.



### **7.3.6. Reflection on research findings and implications**

Reflecting on the findings of this action research and in an attempt to pass on learning achieved through the practical experience of conducting this research, some of the main points that might be drawn by IS teachers and researchers for this context are as follows:

1. Student engagement may be advanced and maintained by splitting assessments and providing formative feedback. Procrastination prior to engagement being reduced significantly by early decision-making, even if this relates only to the basic planning of a project. Such strategies also seem to reduce over-investment of time in group-based projects (5.6.3).
2. Designing interactions that require students to reflect on their own learning processes and preferences leads to more interactive engagement. Designing interactions that require an evidence-based approach, highlighting the value of practical experience and end user input, encourages further reflection, a higher evaluation of own experience, and a greater sense of empowerment among students (6.3.11.6 and 7.3.4.3).
3. Focussing attention on any given aspect of desired learning outcome in large group interactions frequently stimulates a need for small group tutor focussed interaction to ensure students are satisfied with level of understanding for what the tutor has highlighted as 'an important point' (6.3.3).
4. Setting problem-based scenarios and case studies set for undergraduate students in unfamiliar contexts, lead to a waste of student and teaching resources, student and teacher frustration in dealing with the lack of familiarity and therefore remove focus from the desired learning outcomes (6.3.11.2).

5. Student preference for learning interactions in this context is to avoid sleep times where traditionally a siesta would be taken. The physical environment seems more important to tutors than to students but both prefer comfort and quiet. Technology supports teaching and learning when it does not require or distract user attention from the desired learning outcomes (6.2.3.3 and 6.2.3.2).
6. Silence in class, or an apparent reticence to engage in conversation, relates to a wide and complex array of interrelated factors. Many of these factors may be overcome by designing such interactions as a group rather than an individually responsible task, by promoting intra-group familiarity and by allowing sufficient time (being patient) for second language users to respond. Mixing primary with secondary language users does not necessarily lead to mode change in discursive engagement preference or coping response (6.2.2.9 and 6.3.11.7).
7. Even the smallest amount of group-based competition can alter class dynamic to promote engagement, for instance, the offering of sweets to members of the first group to complete a task. More formal motivation through award of marks would seem to be effective at 15% of group project both in online community and classroom engagement (6.3.11.3).
8. Not all students conform to their 'cultural normal' coping response as they enter a new academic environment. Vive la difference! Recognising individual student motivation is time consuming and complex, but small learning interaction using focus groups to discuss these motivation, led to fast learning about group culture and class culture both by the students and the tutor (5.5.4.2 and 6.3.4).
9. As suggested in the literature, raising awareness of expectations at the starting point of a group project in terms of assessment and 'how to do well' seems to encourage early engagement with the project. Clarifying and de-

stigmatising the reporting of free-riding seems to reduce but not remove the occurrence of this phenomenon. Recognising the contribution to a group project in terms of time spent, rather than words written seems to ensure a more balanced division of labour among most groups, as does the recognition and early assignment of different roles to the group member (6.3.2 to 6.3.10).

10. Involving students in both action research and learning interaction design is not only important to good research and good teaching, but is good evidence-based teaching practice (6.3.4 and 7.3.4.3).





## **7.4. Recognition of limitations**

This research has been conducted by a novice researcher who decided to take on what has turned out to be a rather complex three phase interpretive research project. Attempting to embrace the tenets of grounded theory in the GI phase of this project, the researcher recognises the 'analytic exhaustion' and problems in establishing a clear research focus described by Locke (2015:616). This may, among other factors like Charlie, our now 6 year old daughter, have contributed to the 8 year timeline of this project.

Although communication and coursework data was collected last year, the last data to be collected from a focus group and included in this thesis was conducted in March 2014. Therefore it must be recognised that many of these research findings are already over two years out of date and another two iterations of the cycle have already been completed.

That this iterative research project has been conducted over a long period of time, while exhausting for the part-time PhD student, has its advantages in enabling consideration of change over time, but while such a longitudinal study may have its strengths, the context for the study is very narrow (2.3.2), so generalisation across contexts is not recommended without ensuring contextual compatibility.

As discussed earlier in this work and across the literature, it is important to recognise the risk inherent in simplifying intercultural complexities, when researching perspectives held by a specific national group (Gram et al., 2013:762). However, through exploring the themes identified in this research in their unique context, this research may be seen to promote an intercultural dialogue, both through publication of the research findings and through the interactions that the research approach has initiated, over the past 7 years, across the University. This intercultural dialog around the topic of internationalization of education and the

ensuing encounters of educational philosophies, practices, and cultures may be recognised as a desirable outcome of this study.

In the following section, recommendations for further research to extend this research are made.

## 7.5. Recommendations for future research

A significant amount of data, including the students' analyses of their own projects such, as Figure 45 and Figure 46 Sample information student project output analysing the time spent on that project, will be the focus of future studies.

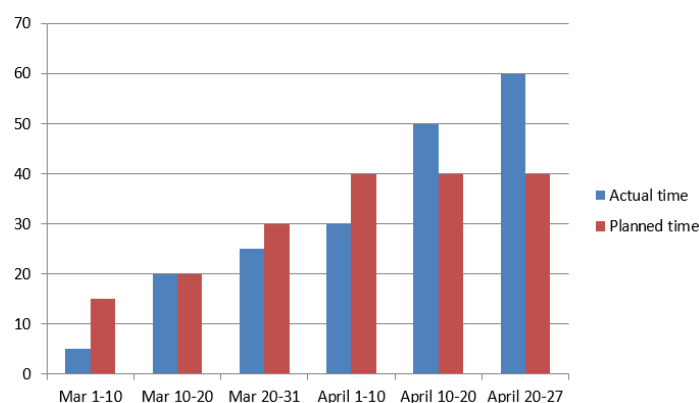


Figure 45 Sample information student project output, comparing budgeted to actual time spend

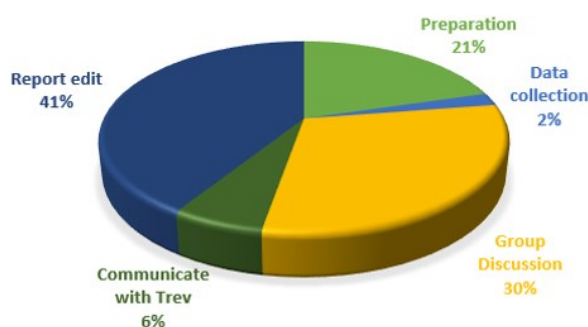


Figure 46 Sample information student project output analysing the time spent on that project

So much data, so little time – the themes identified in this research and not taken on to the AR Phase (5.6) might each in turn be analysed in more depth, as might the causal linkages between them - such causality and relations between themes having been barely touched upon by participants in the GI phase of this research. An example of such a theme being taken forward is that of 'Procrastination' in small group projects, which is currently being addressed by a colleague from another school and I look forward to working with him in that regard.

The strategies tested in the AR Phase of this research and shown to have an impact on these small group projects and learning interactions are certainly not

comprehensive, so further and continuing experimentation is required both in this and other contexts.

If students continue to be more and more international in their choice of study venue, the impact of differences in 'group composition' for small learning interactions would seem to be one likely to bear fruit. How does the number of perceived same (national?) culture students in a group impact on the way they engage in learning activities?

Further exploration of the role of language and strategies for overcoming reticence in communication due to language themes, either in face-to-face or in online interactions as part of a blended-learning approach, would seem to be useful. While technology may not be a substitute for face-to-face communication, there would seem to be many ways in which embracing such technology might help to overcome some of the inherent barriers to interaction between second-language users (where the purpose of the interaction is not related to the acquisition of that second language) and in overcoming some of the hierarchical distortions to idea sharing identified in this research.

A follow-up study to see how these same students apply their learning to decision-making and design in practice would be of significant value in establishing the success of reaching the big picture goal of this research (Figure 44).

As suggested by Tani (2005:7), while the higher demand and frequency of contact with the tutor outside of the classroom has been recognised in the literature, the relationship between in-class engagement and this behaviour does not seem to have been explored in the literature.

## 7.6. Reflection on conclusions

*'Wood Dragons are known to think their conclusions through, which they then embrace with innovation and innate creativity. [...but they...] can often waste valuable time over-analysing problems and concerns'*

Famous Birthdays (2016)

This research may therefore be seen to contribute to several areas of the extant academic literature from related fields, however it would be misleading to consider this research to have come to a conclusion. It continues in each iteration of the academic cycle. The redesign of the Accounting Information Systems module conducted at NUBS in China continues with the hope that the next cohort of students, that will enjoy the teaching and learning interaction, will appreciate the work and effort put into the design of that module by the now thousands of previous participants. Although perhaps, as with the implementation of any supporting technology, the best design of this module would be one which is invisible, where the students are blind to the administration and focussed instead on achieving the desired learning outcomes.

It has been a voyage of discovery. To reflect that I still have problems and concerns over the conclusions that have been reached - that there may be other frameworks or ways of analysing the mountain of data that have contributed to these research conclusions - may speak volumes about the author (a wood dragon), or about the nature of the research project (Bloomfield, 2013:178).

Literature emerging from more seasoned pens would seem to indicate that this would be normal, for a qualitative project, but that doesn't mean I need to like that feeling of uncertainty. Perhaps in the next research project, a more quantitative approach will be taken to probe into some of the themes emerging from this – just for comparison's sake. I will just need to adequately qualify those quantities.

Due to the nature of the enquiry, focussing on problems in the current processes, this work may be seen as formed by and reflective of a negative view or experience of teaching and learning interactions in a predominantly Chinese environment.

Such an impression would be false. The overwhelming experience of the researcher in this context is of a positive environment both socially and academically.

Reflecting on the initial research question '*How can small group interactions be designed to improve student engagement?*' has the design of the AIS module, the module used to conduct this research, metamorphosed into the 'perfect' module for students to engage and learn? Not yet and it seems uncertain that such an end-game is possible in teaching and learning. However, the evidence from the AR Phase of this study would seem to indicate that, through changes made to the design of the module, student engagement is earlier and more obvious – meaning that it can now be measured due to the online nature of the inter-student communication and sharing about the project.

As might be expected, in the final iteration for this study, student feedback would seem to indicate that some enjoyed the ride, while others did not. The explanations given for not enjoying the experience are mainly related to workload and it seems clear from the coursework submitted, that the time invested is generally high. As reflected by Baskerville and Wood-Harper (1998), ending the research process may be an arbitrary act but, fuelled by reflective teaching practice, the process continues.

The aim for the next teaching and learning cycle is to reduce the time investment in the project by accelerating the informed decision-making process. The desired impact is to reduce procrastination and time-wasting in tutor focus and to increase the sense of empowerment over decision-making. This will also be addressed by introducing:

1. A pilot project to accelerate team-building and realisation of empowerment,
2. A reduced timeframe for the main project,
3. A reduction in the award for online contributions to 15% (as recommended in follow-up focus group),
4. Specific decision-making tools and highlighted key decision-points
5. Greater focus on project management,

and we shall see where that takes us.





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## APPENDICES

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## Appendix A Ethics approval form



The University  
of Nottingham  
Ningbo, China

宁波诺丁汉大学

Trevor Bayley

NUBS China

University of Nottingham Ningbo, China

October 10, 2011

Dear Mr. Bayley,

The Ethics Sub-committee of the Research Committee has recommended the approval of the ethics statement associated with your project entitled "Toward Improving Communication in Small Group Seminars in UNNC" dated 5 October 2011. I can now confirm that the project can now go ahead.

Yours sincerely,

Professor Nabil Gindy

Chair, Research Committee

VP for Research and Dean of Graduate School

University of Nottingham Ningbo, China

Cc: Adrian Hadland, Carl Fey

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## Appendix B Participant Consent Form

10<sup>th</sup> October 2011

Dear Participant,

I am currently working for Nottingham University Business School China, at the University of Nottingham, Ningbo, China. This research pack forms part of a study being conducted to examine communication behaviour between stakeholders in the information systems alignment process in China. This part of the study examines the factors influencing participation in small group seminars at UNNC and the development of strategies to improve them. The research outcomes will be used not only to inform the main study but also to inform students and teachers in response to concerns raised at the SSFC - now the Learning Community Forum.

Your participation is completely voluntary, your responses will be treated anonymously and you may choose to withdraw from the study at any time by contacting me at my email address below. Should you have any concern arising from your participation in this research that you do not feel should be addressed by me, I have also included below the contact information for the Chair of the University ethics sub-committee.

The researchers are the only people that will have access to the data obtained from this study. This data will be stored in accordance with University of Nottingham Guidelines and may be presented in an anonymous form at UNNC, at conferences and in journal articles. Since video is captured during the research process, you should be aware that selected media may also be presented. A copy of the final report will be available upon request by contacting me at my email address below.

There are three parts to today's activity. In the first part you will be asked a series of questions about you and your views on the topic. In the second part, through collaboration with other participants, you will be asked to solve various tasks relating to the topic. Finally, you will be asked some questions about your perceptions from the group interaction and about the research process itself.

If you have any queries at any time, please feel free to ask me and I will answer them.

The estimated time of completion of today's entire research activity is about 3 hours.

Thank you very much for your interest and time in helping to make this study possible.

Yours faithfully,

Trev Bayley  
Teaching Fellow in Information Systems  
Nottingham University Business School China  
email: [trevor.bayley@nottingham.edu.cn](mailto:trevor.bayley@nottingham.edu.cn)

Adrian Hadland  
Chair Ethics Sub-Committee,  
University of Nottingham, Ningbo China  
email: [adrian.hadland@nottingham.edu.cn](mailto:adrian.hadland@nottingham.edu.cn)

I have read and agree to terms of the research project as detailed above.



## Appendix C 2011/12 - 'Group Case Study Report'

(Page to be completed and sent by email to your tutor, at least 48 hours before Seminar 2)

Your seminar class of AIS students have decided that, following their graduation from the University of Nottingham in 2013, they will set-up an organisation, with their tutor as CEO,

named

\_\_\_\_\_,  
with a headquarters in the city of \_\_\_\_\_, China,  
and a second location, abroad, in \_\_\_\_\_,  
\_\_\_\_\_.

The main activity of the organisation will be \_\_\_\_\_.

The organisation will consist of the following departments (major business processes):

Department name

Recognising the importance of implementing an appropriate accounting information system in their new organisation, the students have decided to carry out research projects into possible solutions to meet their AIS needs. To do this, they have divided themselves into three independent research groups.

Each research group will research possible solutions from the perspective of and with focus on a particular department's needs. In carrying out their research, each group will also research sufficient information about their final three recommended solutions to inform the other groups of the enterprise wide functionality of these solutions, in seminar 4. This information is not required to be as in-depth as that used for their own department.

Group No	Department name
___ : 1	
___ : 2	
___ : 3	

## Group Work Overview

The accounting information systems module includes Group Work which includes Seminar Work and a Group Report of 5,000 (+/- 200) words excluding the executive report, tables, quotations, references and appendices. This work, which constitutes 30% of the overall module mark, must be submitted (2 hard copies to Faculty Office and final copy to Turnitin on WebCT) by 4pm (9am UK time) on Thursday, April 19th 2012.

### Groups

This assignment will be undertaken in groups of four to eight participants, depending on class size and any changes that may occur during the semester. Since seminars are compulsory, students will be allocated to their groups in their first seminar by their tutors. We do not have a choice of colleagues in practice, so these group allocations are not negotiable.

Organising a group and working effectively within the same is not always easy. However, it is still something that you have to learn and one of the key skills being assessed within this project. Remember that good managers are those that most successfully practice the art of getting work done through people.

### Context

The first thing to note is that this is an imaginary scenario for academic purposes and so the case study is expected to develop as the research projects progress. Due to the requirement that the scenario be initiated as a class, all groups in a class (or their representatives) will need to meet once before the second seminar, to discuss and agree these initial details and assumptions made about their imaginary organisation.

As the group projects take shape and develop, questions of interpretation and detail are likely to arise regarding the case. During this development, there will be a need for further context detail to be decided / assumed for the organisation. Each group should, **without consultation with other groups**, include these independently formed assumptions, in developing their needs analysis. This requirement of non-consultation between groups in a class, for this academic exercise, is so that differences in assumptions and research findings may be discovered in the final seminar, enabling a richer discussion to develop, to assist learning. Clearly this departs from the approach that would be taken in practice. 8)

In practice, the cost and indeed the benefit of implementing a system are primary considerations or, if you like, highly-weighted criteria. Without inviting bids, costs may be difficult or impossible to pin down and, as discussed in the core text and lecture, come from many different activities and sources. In this academic exercise, it is very unlikely that costs could be estimated with any degree of accuracy and so there is no expectation, or requirement, for any detail in their respect, although it may be clear that some types of solution will require lower initial outlays. By enabling students to consider more expensive solutions, the learning exercise will be able to embrace a wider range of possibilities.

In addition to any assumptions agreed by the class and made by each group, any AIS implemented will need to satisfy the following minimum requirements:

- a. Internal Reporting in English and Chinese
- b. User interfaces in English and Chinese
- c. Handles transactions in multiple currencies
- d. Facilitates inter and intra company communications

- e. Provides web based reporting using XBRL or better
- f. Meets the reporting requirements of the Chinese government
- g. Enables user designed management reports
- h. Conforms to best practice e.g. ISO 27002 2005
- i. Will meet their accounting information needs, over the first 5 years of operation.

Finally, and perhaps most importantly, use your informed imagination and creativity and enjoy this process!

## Required

Each group will research and submit an academic report, to be read by the CEO, recommending 3 possible solutions from the perspective of one of the organisation's departments.

Having established an initial needs analysis for their organisation (due to the nature of the exercise, a business case is assumed, for the adoption on an AIS), each group will then independently (and without consulting with each other) develop an argument for 3 AIS solutions. To ensure diversity, of these three solutions, one solution must be a SAAS and one, a local installation and all three must come from different AIS solution providers.

Solutions might not be entirely computer based (there might even be a business case for an entirely paper-based system!), but whichever solutions are chosen for comparison in the report, the rationale for their selection will need to be argued.

The research focus and the comparisons made in the report up to and including section 5 are from one department's perspective. The exchange of ideas and perspectives in seminar 4 is when the organisational considerations will be raised. To enable this, research conducted needs to keep an eye on other business processes supported by the solutions recommended but, no, an in depth knowledge is not expected for processes conducted by other departments.

This is an academic report and should therefore include consistent citation of multiple and suitable sources of information in developing the arguments made. Student groups often fall into the trap of citing single sources of information and therefore fail to deliver a critical argument – particularly when the single source of information is the provider of a service. Try to keep a balance between academic and practitioner sources of information. Remember that the arguments and recommendations made – indeed the report as a whole – is only as strong as its foundations. So keep in mind the reliability and balance of opinion in your chosen sources of information?

## Structure

Since this is an academic exercise, the report structure must be as follows:

### Cover sheet

Name, locations and activities of the organisation (as per page 5)  
 ClassNumber : GroupNumber  
 Table of group members and their Student IDs

### Executive Summary\*

[ 5 Marks]

## Table of contents

[ 1 Marks]

### 1. Introduction

The introduction should provide an overview of the report describing where you were, where you wanted to go, how you arrived there and what you found once you arrived. \* [ 8 Marks]

### 2. Organisational Overview

- a. One A4 high level DFD showing the departmental structure  
Further maps of the organisation may be included in the report, but this one is required
- b. Needs analysis  
A needs analysis for the organisation and for the department chosen [10 Marks]

### 3. Sampling

Description of the process of sampling / choosing which potential solutions to investigate further from the perspective of the department. [ 5 Marks]

### 4. Comparison

Critical discussion and comparison of a number of solution candidates from the perspective of the department. [10 Marks]

### 5. Elimination

Critical discussion of the process of arriving at the final three solutions including a final analysis of the strengths and weaknesses of each of the final 3. [10 Marks]

(Sections 4 and 5 should refer to point scoring matrices used in these two processes)

### 6. Reflection

A critical reflection on the research process, the learning from class and group interactions (particularly seminar 4) and the limitations/freedoms imposed on this academic exercise, compared to practice. [10 Marks]

### 7. Recommendations

From the elimination section, where 3 AIS solutions have been researched in detail, which solution, if any, would you recommend, and why? What should the organisation do next, before making a final decision? [ 5 Marks]

## References

Harvard style formatting is required. Make sure that all references are cited and that all citations have a supporting reference. A common mistake in group work is the omission of references relating to sections of text written by different members of the group. Ensure that your project timeline includes sufficient space to review this. **[ 5 Marks]**

## Appendices

- |  |                   |
|--|-------------------|
| <b>A.</b> Final Point Scoring Matrix   | <b>[ 5 Marks]</b> |
| <b>B.</b> Research project Gantt chart | <b>[ 5 Marks]</b> |
| <b>C.</b> Meeting minutes              | <b>[ 5 Marks]</b> |

## Seminar Work

Generally, seminar work, which includes preparation for seminars, does not directly relate to the group report. However, seminar 1 will put groups in a position to prepare the required documentation for their organisation overview, seminar 4 will help inform sections 6 and 7 of the report and the final products from seminars 2 and 3 will be included as appendices to the group report as follows:

- |   |                   |
|---|-------------------|
| <b>D.</b> Seminar 2 – screenshots (not print view) of any two forms produced by the group.<br>(Assessed on utility, level of complexity and design) | <b>[ 6 Marks]</b> |
| <b>E.</b> Seminar 3 – screenshots (or printouts) of any two reports produced by the group<br>(Assessed on utility, level of complexity and design)  | <b>[ 6 Marks]</b> |

The marks available for seminar work include 1 mark per group for preparation and participation in seminars (1 per seminar). To qualify for full marks, students groups must have completed all preparation and contributed well in the seminar.  
**[ 4 Marks]**

**TOTAL**  
**[100 Marks]**

\* For further information on executive summaries, introductions and Harvard style referencing, see the undergraduate student handbook. A little independent research, for examples, is also recommended.

## Final Mark Allocation

Every group member will receive the same mark unless:

- a) the minutes in Appendix C of the final report indicate to the contrary and
- b) a representation is received in writing, indicating that one or more group members should receive a reduced mark. Such representations will not be accepted after the submission date. Where such a representation is not signed by all group members, those group members not included will be invited to put their side of the story.

It should be noted that a request for unequal final mark allocations would be considered exceptional, as it is hoped that the art of equitably allocating work within a group and solving disputes that may arise, will be one of the key skills practised by all those undertaking this project.





## **Appendix D 2012/13 - 'There's no accounting for students'**

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### THERE'S NO ACCOUNTING FOR STUDENTS

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Trev Bayley wrote this case solely for use in the Accounting Information Systems module, as a case scenario for a group project and seminar discussions.

Version: 20130321

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Trev and Joseph sat in Aroma café sipping their coffees in silence – on the table between them lay a stack of case studies. It was cold outside, but the sofa was comfortable and the coffee was hot and warming. With his hands clasped behind his head, Trev stared up at the ceiling. He had been happy to learn that Jo and he would be working together again to teach the AIS module in the coming semester. The module delivery had gone smoothly in the previous year - students seemed to have enjoyed the learning experience and to have done well in their assessments. But their feedback showed that they had over-invested their time in the module, with too much assessment being the cause.

They were both aware of this problem, arising when Individual coursework had been added to the module, but now this element of the assessment had been removed, so that this year there would just be an exam and a group case study report. Their meeting today was being held to choose the case study for this group project. It was all very well that the individual project was now history, but what should now be included? They had just spent the best part of an hour combing through and discussing all the case studies on the table.

"The problem" began Trev, "is that these case studies seem to have been written for organisations and contexts about which the students know nothing. How will they understand the full picture – I mean, 'the devil is in the detail'... How much information would need to be available, for people that have no experience in that business... or any business, to propose a course of action? I mean, if we threw these students into practice, how would they even know that a decision needed to be made, or that they had

enough information or the 'right' information to make a decision, even if they recognised that one was needed?"

"What worries me is that these cases seem to have been written from a management perspective, and here we are teaching students to engage with *all* of the people involved in a case. Surely, taking just one perspective... there must be some distortion..."

Trev sighed. "OK. What we need is a case study that has a context familiar to our students, so that they already know "the way we work here". Then they can focus on problem solving and not dwell on context."

"Well that's easy... we just set the case study here! That way there is no distortion in the presentation of the case, because they are already a part of it. If there is anything they are unsure of, about the context, they simply need to look and ask around themselves."

"But this is an Accounting information systems module. What do *students* need to account for in this context?"

"Well we could ask them to keep a track of their expenses?"

We could, but that's only one part of accounting... How about their time allocation between different modules? That way they will be able to account for their allocation of study time between modules – the problem identified in our module feedback last year. Hmmm. If they also account for who did what on each of the stages of their project, we might even be able to do away with the minutes of their meetings - this could become part of their accounting system and be used to manage the project."

"Sure. We could gain two pictures of time spent. One for how much time each student spent on the different parts of their AIS group project over the whole semester, and one, for a week, to show their time allocation between modules... and other activities, like sport, sleep and... online gaming!" chuckled Jo.

"Yes, and I would also like them to think a bit more about what they could account for, you know like Ruth Hines suggested in her 1988 paper... What we should do is to let them choose one more thing to 'recognise', measure and account for – an 'accountable', if you like. Sure, they could account for their expenses, as you suggested, or they could use their imagination and creativity to 'recognise' something different and that way we can get them thinking more about why we have these systems in the first place and what impact they have on the people that are a part of them."

"I think we need to be a little bit careful there. I mean, maybe a group would like to account for changes in student perceptions of tutor

awesomeness. They would need to develop a method to measure that and some form of scale for comparison.”

“I agree. I think we need to make sure that groups are on track with their choices. Let’s say that they must advise their seminar tutor, by their second seminar, of their choice of ‘accountable’, their method of capture, measurement and comparison. Then we can be sure that their proposals ‘make sense’ before they commit too much time to capturing and recording data.”

“Hmmm capture... So what system will they use to capture and report this information?”

“Well, they *could* use a pen and paper, or MS Excel, but they have had enough of MS Excel in their previous studies and now they don’t have the Individual Project to worry about... We could ask them to develop a simple prototype system using MS Access. They will be learning about that again this year, for their computer-lab seminars, so that would make the lab sessions directly related to their projects.”

“Not a complete MS Access system?”

“No, we don’t need these budding managers and accountants to be programmers, but we do need them to understand how these relational databases store accounting data, so that they know what it means when they ask for information. Making a prototype database, capable of capturing and reporting useful information, will enable them to demonstrate their learning from the module and to wrestle with issues of system design and user interfaces.”

“OK, so that would take care of the context and a database project where they will need to work on the tables, queries, reports and forms, but how will they actually capture the data?”

“Which data do you mean? Data for accounting or data about the system design?”

“I meant for their accounting, you know, time, expenses or whatever else they decide to ‘realise’.”

“Well that’s up to them to figure out. They’ll have to keep some form of source document, so they will experience the different problems associated with having to account for their actions... It would also be good if they were to do some research to find out if technologies can help them to do that more efficiently and accurately.”

“You want them to implement a new technology into their system?!”

"Oh no, we cannot expect that! Nor can we expect or allow them to spend money on anything like that, but we can ask them to research and propose a plausible solution that would make the whole process much easier, from the student perspective."

"So, two system designs... The first is the conceptual design of the system that they will develop and use to capture and report their data from this semester, using an MS Access database, and the second is a proposal for an improvement to that system, using commercially available technology, that could be used to capture their data, which would again then be stored and reported from their MS Access database."

"Of course they will need to provide some documentation for these two systems so that other people, like ourselves, can understand them, but I think we should also leave it up to them to decide what documentation would be appropriate. Documentation techniques will be covered in their first seminar, so they can practice them then, before starting to prepare some for their group projects."

"So what about the data you mentioned to help them design their proposed systems?"

"Well we're going to be teaching them about approaches to developing a system specification, so we could ask each group in a class to use a different approach to understanding the system and then compare their findings with other groups. That way everyone gets to see the differences in the findings using each approach and can then write a reflection on those differences and the whole project as part of their report."

"But there are so many different approaches - we should probably just focus on a few... How about 1. soft-systems methodology, 2. user-centred and 3. evidence-based approaches, so if we have 3 groups in each class, that's one for each."

"But they will need to be able to communicate with each other to develop their understanding of each approach, so we should set up three discussion boards on Moodle for them to discuss these ideas, problems and solutions, as a community."

"But some people like to sit back and watch, rather than contribute to a discussion – just like in class. How can we motivate groups to communicate with each other on the boards?"

"I find it hard to assess students on their contribution to the class, while in a classroom setting, but with the bulletin boards, it should be much easier. How often they contribute and how useful their contribution is can all be seen there. We could allocate a portion of the group work mark for the group's regular contributions to the boards. That should act as a motivator!"

"and get them communicating with each other..."

"We will see. I do hope the students will give us some feedback during the semester - I've added a link on Moodle for that - so we can see what they have to say. We might have room to make some tweaks as we go along."

"Well it sounds interesting and the students should learn from it, but..."

"Yes, I know... I've got to go write it all up for the brief..."

"No... I was just wondering if all of them will enjoy it..."

"Oh I do hope so, but there's no accounting for taste."

## Required

### 1. Report

Your group will write an academic report in which a proposed solution to this case will be put forward. Other requirements of the report, the MS Access project and the processes to be engaged in, are given below.

### 2. Scope

The process being analysed extends from the event (e.g. activity, payment), to the output of reports. You do not need to resolve how different parts of an entire accounting system might be integrated (e.g. posting to a GL), simply treat your sub-system as a stand-alone system.

### 3. Exclusions

While issues of security, control and audit are clearly important, as a prototype model your database project will not be expected to meet standards relating to these considerations. However, you will be expected to have addressed issues relating to data integrity and object design to minimise data entry error and ensure completeness of records, within your MS Access project.

### 4. Research Data

There will be four sets of primary data (i.e. data collected by you, the researcher)

Please only include **information that you are comfortable sharing**:

- i. **"One Day"** – Activity and chosen 'Accountable' (or expense) Data - test data

The first source of primary data will be data collected from any day in the 2 weeks prior to your group's second seminar. Each student will collect a set of paper-based source documents (receipts, print-outs, logs etc.) to vouch their transactions during that 24 hour period (If receipts are required for other purposes, please make a copy for use in this module exercise). The level of detail that is needed for each event will be determined by each group, but this decision will eventually be driven by the information generated by the system (See Reports). Each group will use their own members' "One Day" data to inform the design of, and test, their MS Access database. All receipts will need to be filed in a systematic way that enables a quick audit to be carried out between the data entered on your system and that vouched in your source documents.

- ii. **"One Week"** – Activity and chosen 'Accountable' data

The second source of primary data will again be collected by each student, this time for one complete week. Which week is not important and will depend upon when the group is ready to start this process, since the data

captured may, to an extent, be dictated by their system design. This data collection will need to be completed prior to the group's final seminar, since the filed source documents will be required at that seminar.

### iii. **Group project activity data**

The third set of data will be collected by each student in respect of their own time allocation to the AIS Group Work project, from start to finish – including an estimate for the last stages – i.e. printing and binding the final report and walking it to the admin building to submit. Depending on your system design, there may be some overlap between this data, the "One Day" and "One Week" data – make sure there is no duplication.



### iv. **"End user" data**

The fourth and final source of primary data will be data collected from focus group discussions arranged by student groups using other AIS students as participants. These focus groups should address the process of data capture of the "One Day" data and will be designed by the group according to their research perspective (SSM, User-Centred or EBM). Participants should therefore be those AIS students who have already captured "One Day" data. This data will take the form of notes / rich pictures etc. taken during these discussions by both the observers and participants. The purpose of this is to enable the process to be understood and a needs analysis to be established. Having collected data for a day, each student will have experienced the collection process first hand and will therefore have a practitioner perspective on the activity. While you may be students, and therefore cultural insiders to this context, you should extend such research to other students, to understand their needs. Focus group discussions are required, but interviews, questionnaires and user observation are also suitable approaches to gaining an understanding about the way people interact with each other, with technology and with the systems that they use. Additional data, about your groups 'Data capture proposal', will be added to this 'End user' data when it arises from the discussions that will be held in Seminar 4.

## 5. **Data capture proposal**

To address the supplementary question about the use of technology to help students capture data, you will conduct research into possible technological solutions. Guided by your own research, practitioner information and academic publications, you will select a number of possible technological solutions for comparison and make an informed recommendation in your report.

## **Report Structure**

Since this is an academic exercise, for assessment purposes, the report structure must be as follows and an approximate mark weighting is given as a guide:

## Cover sheet

AISClassNumber:GroupNumber e.g. AIS01:3  
Table listing group members, with their Student IDs

## Executive Summary\*

## Table of contents

This can be automatically generated, if using MS Word.

### 1. Introduction

The introduction should provide an overview of the report, describing where you were, where you wanted to go, how you arrived there and what you found once you arrived. \*

**[ 4 Marks]**

### 2. Literature review

What does recent literature say about the topics that you are researching? e.g. the capture of time, or of your 'accountable' data - Are there any success or failure case studies of the implementation of a similar system? Are there any similar cases in the context of students, of business in China, or both? What research approaches were taken in these cases or in other studies in a similar context?

**[ 8 Marks]**

### 3. Methods

What end-user data collection methods were used, what data was collected, from whom and is it enough? What adjustments did you make to your focus group design to try to ensure that people who participated in your study provided useful information to inform your research?

**[ 7 Marks]**

### 4. Conceptual Design

This section will include an overview of your first system, the objectives that it sets out to achieve (based upon the needs identified in the brief and from your focus group and other research) and documentation of your system to enable the people involved to understand it. Such documentation will need to cover the whole process (refer to Scope section above).

**[ 14 Marks]**

### 5. Data capture proposal

This section will include the design of your second system. To ensure rigour in your work, the methodology employed in this process of selection, research and comparison of commercially available data capture technology products should also be explained. This will be followed by a critical discussion and comparison of these (there is no correct number) possible solution candidates including a point scoring matrix.

**Note:** You do not need to implement this data capture solution – it is a proposal for how the system could be designed.

**[ 14 Marks]**

### 6. Reflection and Conclusion

In this section you reflect critically on:

- the limitations/freedoms imposed on this academic exercise that might not exist in practice,
- comparison of your research approach to those assigned to other groups, with reflection on which approach you might be more likely to adopt in practice, and why,
- any assumptions that you may have made, and
- any unresolved problems identified in your proposal,

then draw your conclusions and make your final recommendations.

**[ 10 Marks]**

**References**

There is no correct number of references to be cited in your work. However, you should ensure that every argument made is supported by the citation of the sources of information used to develop that argument. Harvard style formatting is required to avoid a "major error" and a marking cap of 59%. If citing a second language source, make sure to use appropriate Harvard style formatting for this type of reference.\*

**Appendices**

**F. Reports from MS Access 2010 Project**  
**[ 8 Marks]**

**G. "End User" data – e.g. notes from focus group discussions and seminars (in English)**  
**[ 5 Marks]**

**MS Access Project**

Assessment of the MS Access project will take into consideration:  
Accuracy of implementation of conceptual design  
User interface – e.g. ease of use (Forms)  
Data control (Tables and forms)  
Consistent and appropriate programming conventions  
Accuracy of outputs

**[ 20 Marks]**

Moodle community contribution

Assessment of the group's contribution to the Moodle community discussions will take into consideration the quality, quantity and timing of the contributions.

**[ 10 Marks]**

**Total [100 Marks]**

\* For further information on executive summaries, introductions and Harvard style referencing, see the undergraduate student handbook. A little independent research for examples is also recommended.

**Answers to frequently asked questions**

There is no correct way to allocate your word count and yes, if you think a graphic would help present your argument, this might be a good thing to include in your report.

As an academic report (as opposed to a consultant's report), consistent citation of multiple and suitable sources of information should be included in developing the arguments made. Student groups often fall into the trap of citing single sources of information and therefore fail to deliver a critical argument – particularly when the single source of information is the provider of a service or product – marketing websites tend not to give balanced opinions on the products they present.



Try to keep a balance between academic and practitioner sources of information. Remember that the arguments and recommendations made – indeed the report as a whole – are only as strong as their foundations, so keep in mind the reliability and balance of opinion expressed in your chosen sources of information.

Please make sure that all references are cited and that all citations have a supporting reference. A common mistake in group work is the omission of references relating to sections of text written by different members of the group, when these separate sections are combined into the final report.

### **MS Access 2010 Project**

This prototype data-entry interface and reporting tool will be developed by the group using MS Access 2010 and will include at least the following:

a. data entry forms:

A form will be required for each table into which the user is required to enter data. These user interfaces should be optimised for fast data entry while minimising entry error. A 'navigation' form (See the 'navigation' button on the 'Forms' section of the 'Create' tab) for the user to navigate to your reports and data entry forms, will also be required.

b. tables and queries:

There is no correct number of these database objects, since this will depend upon your design. Unlike the Database Design and Implementation module, you are not expected to use "action" queries to create tables for the AIS module. You can therefore create tables manually, but make sure to set the parameters for each field (attribute) in each table before creating relationships between tables. Of course you will plan your design before you start to program, won't you?

c. reports:

- I. Report of each group member's profile information, with details of their time allocation to each stage of the AIS Group Work Project,
- II. Summary report of each group member's allocation of time to all activities in "One Week", including totals for each module and non-study related activity.
- III. A summary report of your own design, providing useful information based upon the "One Week" data.
- IV. A report of your own design, providing useful information based upon the "One Week" data.

With the exception of Report I, these reports will be generated from the "One Week" data collected by the group but, depending on data compatibility and inter-group agreements, data may be shared between groups for a fuller picture to emerge. These reports will be included as Appendix A to your proposal (See Report Structure section above). With the exception again of Report I, lengthy reports

are not necessary so, if a report includes many pages, only include sufficient pages to demonstrate each part of your report design.

### **Notes**

Informed by the reporting requirements, you will need to decide what an appropriate unit of time and detail would be for your system and make a recommendation accordingly. You will also need to decide how you will code each event. For instance, if you capture the name or type of recipient of a payment, in addition to the item description and cost, this will enable additional information to be reported.

## Appendix E 2013/14 - 'Are students accountable?'

### ARE STUDENTS ACCOUNTABLE?

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This problem-based case has been written solely for use in the Accounting Information Systems module, as a scenario for the group project and seminar activities. Please note that this document will likely continue to change as the semester progresses. Check that your version number is current...

Version: 20140330

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Trev and Joseph sat in Aroma café sipping their coffees in silence – on the table between them lay a stack of case studies. They had spent the past hour combing through and discussing them, trying to select one for use in the AIS module.

"The problem" began Trev, "is that these case studies seem to have been written for organisations and contexts about which the students know little or nothing. How will they understand the full picture – I mean, 'the devil is in the detail'... How much information would need to be available, for people that have no experience in that business... or any business, to propose a course of action? I mean, if we threw these students into practice, how would they even know that a decision needed to be made, or that they had enough information or the 'right' information to make a decision, even if they recognised that one was needed?"

"What worries me is that these cases seem to have been written from a management perspective, and here we are teaching students to engage with *all* of the people involved in a case. Surely, taking just one perspective... there must be some distortion..."

Trev sighed. "OK. What we need is a case study that has a context familiar to our students, so that they already know 'the way we work here'."

"Then they can focus on the problem solving side of the case study and not dwell on context."

"We could just set the problem within their own context, making every action that a student takes an 'accountable' activity! That way there is no distortion in the presentation of a case, because they are already a part of it. If there is anything they are unsure of, about the context, they simply need to look and ask around themselves."

"So what could *students* account for?"

"Students should read Ruth Hines's paper and think about what they could account for, using their imagination and creativity to 'recognise' something relating to their activities as a student. This should get them thinking more about why we have these systems in the first place and what impact they have on the people that are a part of them."

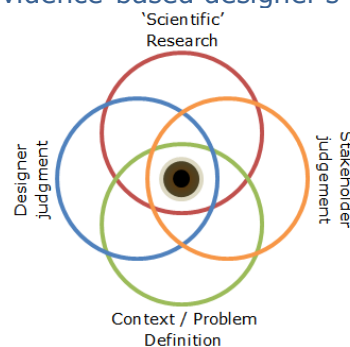
"I think we need to be a little bit careful there. I mean, maybe a group would like to account for changes in student perceptions of tutor awesomeness. They would need to develop a method to measure that and some form of scale for comparison."

"I agree. I think we need to make sure that groups are on track with their choices. Let's say that they must advise their seminar tutor, before their second seminar, of their choice of 'accountable', their method of capture, measurement and comparison. Then we can be sure that their proposed systems 'make sense' before they commit too much time to capturing and recording data."

"We need to make sure that students don't spend too much time choosing what to account for. While there is no main focus for this report – the chain is only as strong as its weakest link – this choice of 'accountable' is important, since it will decide the starting point of their research – each different accountable will require different evidence to support the decisions they make in designing the system used to account for it. The arguments that they develop in designing this system will probably take up most of their time on this project. So how will they make sure that these arguments – their approach to this project – is evidence-based?"

"Well, all "evidence-based" means is the judicious use of 4 sources of information in each decision that is made. Here, let me draw the idea for you:"

The evidence-based designer's lens



"We'll be teaching them about this process in lecture and they will have the chance to collect their own data from and about stakeholders and the context in seminars."

"OK. So... every accounting report is for a point in time, or for a period of time... so how long should they account for?"

"I would think data from one day would be enough, if it is detailed enough, to demonstrate their proposal. They will need to experience collecting the data themselves, so they understand the process they are proposing better and can test and adjust it."

"But what if they really don't like the process, or the data turns out to be no good?"

"Well, then they will need to change the process and repeat the collection for a day..."

"But what if they don't actually capture the data but just make it up?"

"Well that is one of the problems faced by all accountants – GIGO – the audit trail is the evidence we use to check that the information reported is matched to the data collected... but if people are to be held to account for their actions, somewhere there needs to be an element of trust."

"Well then, we will need to see how they propose for these source documents to be created... do you think students can be held accountable?"

"We will see..."

(\*The word 'accountable' means to be held responsible, but in this word-play it also means that an account of their actions can be produced.)

## BRIEF

### Scenario

You are members of AIS Module Inc, an organisation engaged exclusively in the processes of the AIS module. Although AIS Inc has been active for many years, there has been no formal reporting requirement and so no accounting information system has yet been implemented.

The problem is that, from the 1<sup>st</sup> September 2014, all students in the organisation will be required to account for their own actions and to provide useful information about their own activities to all stakeholders in (people or systems that can affect or be affected by) the processes of the AIS module.

A steering committee, which includes your tutor, has been formed to select suitable reporting sub-systems for their MS Access based AIS, to support this new reporting requirement.

### Requirements

Each group of students is responsible for providing an academic report to the steering committee of 5,000 words (+/- 500 excluding cover sheet, executive summary (~150 words), table of contents, references and appendices – Appendix C may count towards up to 1,000 words), proposing a new sub-system to account for one of the activities in which AIS students are engaged. This activity can be part of any of the processes in which AIS students are engaged, as long as it is either part of the AIS process or a process that has an impact upon AIS processes.

**There is no set structure for this report**, but the report should essentially provide the information that a simplified evidence-based **systems analysis report** (See chapter 20 – Lecture 6) might include, to support the conceptual design of the chosen information outputs.

The report will demonstrate and reflect on the process by which you have arrived at your final proposed system design. In better reports, the arguments developed will be persuasive, the sources of evidence reliable and balanced.

The report will be referenced using Harvard style. For further information on executive summaries and Harvard style referencing, see the undergraduate student handbook.

### Proposed System

All systems proposed must include the computerised element of the system, an MS Access database used in the 3<sup>rd</sup> AIS seminar, as tailored to the group's needs with the help of their tutor. The whole system proposed will include all elements, including any manual processes, from the initial capture of data, at the time of the event (I use the word 'capture' here since the data will need to be recorded in some way, but will probably not be directly 'captured' by the MS Access database, meaning that some form of operation will be needed to input the data from a source document to MS Access), to the output of useful information.

### Exclusions

You do not need to resolve how different parts of an entire accounting system might be integrated (e.g. posting to a GL), simply treat your sub-system as a stand-alone system.

While issues of security, control and audit are clearly important, as a prototype model your proposal will not be expected to meet standards relating to these considerations.

### Appendix A Reports

To demonstrate the proposed information outputs for stakeholders, the MS Access database will be used to output 2 reports using information about the student group's engagement during one day (24 hours) in the activity for which they have chosen to account. The first of these two reports will show summarised information and the second will provide a more detailed analysis of the same data. The detailed report need only be as long as is needed to demonstrate the design of the output.

A third MS Access report will show each group member's profile, including a summary of their contributions to each part of the whole project.

These reports will be included as appendix A of your report. You can export MS Access reports to MS Word, from their Print Preview.

## **Appendix B Documentation**

The proposed system will need to be documented (you will be learning about documentation techniques early on in the module) and these documents included within Appendix B of the report – each group will need to decide what documentation would be useful for their system.

## **Appendix C Data**

Data collected in the form of drawings, summarised notes, observations and reflections from seminar 4 should be included as Appendix C to the report. Up to 1,000 words of this appendix may be included in the word count.

## **Evidence-based approach**

Taking the evidence-based approach, students will need to explore four sources of information to guide them in their system design:

### **1. Practitioner expertise and judgment**

Our students are already experts at being students, some seem to do it without even thinking, but the expertise that students gain from engaging in this module will also form part of the expertise they will use to inform their decisions in this proposal. So lecture and seminar preparation and activities should be taken as guiding evidence from this perspective.

In addition to these interactions, students will also gain experience from using their proposed accounting system when capturing data about themselves for 1 day. Students will be able to use this learning to inform and adjust their system design and so should take notes while engaging in this process.

### **2. Evidence from the local context**

The context is familiar to students - the only change to it being the problem set for this project – i.e. the content of this document.

Consider how the context in which this system will be implemented influences what might be implemented e.g. What other processes are students engaged in and how might this impact on your proposal? Is there any evidence to suggest that students would engage in such an accounting process willingly?

You will also have the opportunity to collect evidence about the context, in your second and final seminars. It might be considered that evidence from students that have taken this module in earlier years would be useful. However, such evidence should be judged with caution since, while the tutor is the same, the project is different.

### **3. A critical evaluation of the best available research evidence**

What accounting information systems have been applied in this or similar contexts? What evidence can you discover from academic research and practice in such implementations to help inform your decisions?

As with all academic writing, students will need to judge the quality of the different sources of academic and practitioner information available to them, before using them as evidence in their project.

### **4. The perspective of people who might be affected by the decision**

The people who might be affected by their proposal? For this scenario, this will only include the tutor and students in the same seminar class. As mentioned above, to enable students to better understand the context and perspectives of other students in their class, the second seminar will provide the opportunity to learn about and to conduct focus groups.

The fourth and final seminar will provide a showcase for students to present their ideas and to engage in focus groups of their own design, to help them to understand how people might react to their proposals. Each group will have 30 minutes to present their ideas and to engage with the class to inform their proposal design. No, these presentations will not to be assessed and no, you do not have to use MS PowerPoint – but you can, if that would help.

For further examples and explanations of evidence-based approaches, please see the Moodle section on this topic. Your research for this project may also include discovery of any evidence-based approaches that may have been taken to design in similar contexts.

## **Frequently asked questions**

### **How should we allocate our words and can we use graphics?**

There is no correct way to allocate your word count and yes, if you think a graphic would help present your argument, this might be a good thing to include in your report.

### **Do we need to submit a database with our project?**

No, but you will need to take some data / source documents to seminar 3, along with some sketches of your MS Access report designs, so that you can use this to develop your database and populate (fill) your reports. 24 hours data collection may not be sufficient to demonstrate the design of some reports. If this is the case, we will take your original data and use it to generate more data to enable you to demonstrate this report design.

If your system requires a manual input process, you might choose to show samples of your source documents and screenshots of your input forms and/or test some different system interfaces during your focus group session in seminar 4. That's up to you.

### **Do we need to propose a new technology as part of our proposed system?**

That depends on your research - if you propose a new technology rather than an old technology (What is new? What is old?), what will your argument be for doing so? Imaginary technology is not permitted since whatever technology you propose will need to be used by you to collect your data for 1 day. Also bear in mind that there is no budget for this proposal, so whatever technology you propose in your system will need to be owned by students. What will students that do not have this technology use?

### **What do you mean by 'academic' report?**

As an academic report (as opposed to a consultant's report), consistent citation of multiple and suitable sources of information should be included in developing the arguments made. Student groups often fall into the trap of citing single sources of information and therefore fail to deliver a critical argument – particularly when the single source of information is the provider of a service or product – marketing websites tend not to give balanced opinions on the products they present. By taking an evidence-based approach, this trap should be avoided.

Try to keep a balance between academic and practitioner sources of information. Remember that the arguments and recommendations made – indeed the report as a whole – are only as strong as their foundations, so keep in mind the reliability and balance of opinion expressed in your chosen sources of information.

### **What sources of information should we use?**



This is again down to your judgement of what sources are reliable enough for you to use to form evidence for decision-making. Students today do not face a problem of not enough information, but rather one of too much. Perhaps the question is "How to find the most useful information?". The trick is in finding evidence that most closely relates to the context to which you will be applying it.

Books, magazines, web-pages, interest groups, bulletin boards, academic and professional journals - electronic or printed - can all be useful. But give some consideration to how you manage to discover them, why they were written and what/who may have influenced the information that they provide.

If you speak a second language, you should also make the most of that skill - make sure you again use Harvard formatting for your referencing of second language sources, giving the translation of the title in square brackets [] after the original title.

### **Do we need to show evidence of our research in our report?**

Yes. You should support your arguments with any evidence you think will make your arguments stronger. You will only be conducting one focus group, and your tutor will be present, so there is no need to show a photograph of that, but any tangible output from your focus group should be included with your report, either in the body of the report, if that makes sense, or in appendix C. Such evidence might include rich pictures, lists, observations etc. generated during your focus group and any summarised data that your group might have produced from analysing this data.

### **How many references do we need?**

There is no number or ratio of citations to words that can be used to provide a guide for this. Simply make sure that every argument made is supported by appropriate evidence.

Please make sure that all references are cited and that all citations have a supporting reference. A common mistake in group work is the omission of references relating to sections of text written by different members of the group, when these separate sections are combined into the final report.

### **How will I do well in this project?**

This project will be assessed in accordance with the marking criteria detailed in the student undergraduate handbook. Thus, doing well is not so much about the proposed solution, but more about the process of arriving at it.



## Appendix F 2014/15 - 'Students accounting for 2014/15'

### BRIEF

#### Imagined Scenario

Assume that from 1<sup>st</sup> March 2016, AIS students will be required to prepare accounts of how their group spent its time on the AIS project.

Your group have been engaged by the steering committee (your tutor) to research and propose a simple conceptual design for a stand-alone accounting information system, to enable such accounts to be generated.

#### Requirements

Each group of students is responsible for providing two submissions:

1. An Initial plan which will contain:
  - a. An initial Gantt chart (Lecture 3) for the project.
  - b. Sketches/draft versions of the three intended outputs from their proposed system.
2. A final report in the form of an academic proposal to the steering committee of 5,000 words (+/- 500) excluding cover sheet, executive summary (~150 words), table of contents, references and appendices – Appendix D may count towards up to 1,000 words).

Each student will need to keep a record of how they have spent their time on each element of their group project – from start to finish. This data is not a sample but is a complete record which will correlate to the Gantt chart.

#### Structure

Cover sheet  
Executive Summary  
Table of contents  
Main body of proposal  
References  
Appendices A, B, C and D

**There is no set structure for the Main body of this proposal**, but it might be a simplified **systems analysis report** (See chapter 20 and Lecture 4). Due to the nature of the scenario, a full SAR would not be practical (See exclusions).

The proposal will include all elements of the system, including any manual processes, from the initial capture of data, at the time of the event (I use the word 'capture' here since the data will need to be recorded in some way, but will probably not be directly 'captured' by the computerised system,

meaning that some form of operation will be needed to input the data from a source document), to the output of useful information.

The MS Access database, used in the 3<sup>rd</sup> AIS seminar, as tailored to the group's needs (perhaps with the help of their tutor), may be used to generate the required outputs. Although such reports might be produced using any free to use accounting information system or app.

The proposal will demonstrate and reflect on the process by which you have arrived at your final proposed system design. In better reports, the arguments developed will be consistent, persuasive and the sources of evidence reliable and balanced.

The report will be referenced using Harvard style. For further information on executive summaries and Harvard style referencing, see the undergraduate student handbook.

## **Exclusions**

Bearing in mind that this is an imaginary scenario and in order to simplify the project, the following exclusions are imposed:

1. Students may not engage in any independent data collection in respect of this project. All such data collection will take place in seminars. In seminar 4, each group will be required to design their own focus group activity, from which they will gain access to end user opinion.
2. You do not need to resolve how different parts of an entire accounting system might be integrated (e.g. posting to a GL), simply treat your sub-system as a stand-alone system.
3. While some reflection on feasibility might be useful, it may be assumed that a feasibility study will be conducted separately from this proposal.
4. While issues of security, control and audit are clearly important, as a prototype model your proposal will not be expected to meet standards relating to these considerations.

## **Appendix A Outputs**

Three outputs, providing useful information about the time spent on the project will be included in this appendix, along with the draft sketches of these 3 outputs that have been submitted via Turnitin, as part of the Initial plan. Reflection on differences should be included in the Main body of the report.

## **Appendix B Gantt charts**

A draft (submitted as part of the “Initial plan”) and a final chart should be included here. This will enable budget to be compared to actual. Again, reflection on differences should be included in the Main body of the report.

## **Appendix C Documentation**

The proposed system will need to be documented (you will be learning about documentation techniques early on in the module) and these documents included here – each group will need to decide what documentation would be useful for their system.

Documentation included in this appendix may either be referred to from the Main body of the proposal, or may be duplicated there if this is seen as appropriate.

## **Appendix D Data**

Data collected in the form of drawings, summarised notes, observations and reflections from seminar 4 should be included as Appendix D to the report. Up to 1,000 words of this appendix may be included in the word count.

## **Frequently asked questions**

### **How should we allocate our words and can we use graphics?**

There is no correct way to allocate your word count and yes, if you think a graphic would help present your argument, this might be a good thing to include in your report.

### **Do we need to submit a database with our project?**

No, but if you intend to use MS Access to generate your outputs, then you should take some data/source documents to seminar 3, along with your sketched outputs, so that you can use this to develop your database and populate (fill) your reports.

### **Can we propose imaginary technology?**

No. All technology needs to be available and used by you in your testing of the system you are proposing.

### **Do we need to propose new technology as part of our proposed system?**

That depends on your research - if you propose a ‘new’ technology rather than an ‘old’ technology (What is new? What is old?), what will your argument be for doing so? Also bear in mind that there is no budget for this proposal, so whatever technology you propose in your system will need to be owned by students or free-to-use. What will students that do not have this technology use?

### **Do we need to show evidence of our research in our report?**

Yes. You should support your arguments with any evidence you think will make your arguments stronger. This includes academic literature, practitioner literature, and any evidence from the context that you would cite and include in your references. Try to keep a balance between these three potential sources. In addition, your own reflection on the experience of collecting data and conducting the project are a relevant source of evidence. For instance, when designing your system, what decisions were made and how were they made.

When it comes to primary data, you will of course be taking notes during seminars, but will only be designing one focus group. Any tangible output from your focus group should be included with your report, either in the body of the report, if that makes sense, or in appendix D. Such evidence might include rich pictures, lists, observations etc. generated during your focus group and any summarised data that your group might have produced from analysing this data.

### **What do you mean by 'academic' report?**

As an academic report (as opposed to a consultant's report), consistent citation of multiple and suitable sources of information should be included in developing the arguments made. Student groups often fall into the trap of citing single sources of information and therefore fail to deliver a critical argument – particularly when the single source of information is the provider of a service or product – marketing websites tend not to give balanced opinions on the products they present. By taking an evidence-based approach, this trap should be avoided.

Try to keep a balance between academic and practitioner sources of information. Remember that the arguments and recommendations made – indeed the report as a whole – are only as strong as their foundations, so keep in mind the reliability and balance of opinion expressed in your chosen sources of information.

### **What sources of information should we use?**

This is again down to your judgement of what sources are reliable enough for you to use to form evidence for decision-making. Students today do not face a problem of not enough information, but rather one of too much. Perhaps the question is 'How to find the most useful information?'. The trick is in finding evidence that most closely relates to the context to which you will be applying it.

Books, magazines, web-pages, interest groups, bulletin boards, academic and professional journals - electronic or printed – can all be useful. But give some consideration to how you manage to discover them, why they were written and what/who may have influenced the information that they provide.

If you speak a second language, you should also make the most of that skill – make sure you again use Harvard formatting for your referencing of second language sources, giving the translation of the title in square brackets [] after the original title. For example:

Bayley, T.C.R. (2015) 你好世界 ! [Hello World!]. Ningbo: Publisher

### **How many references do we need?**

There is no number or ratio of citations to words that can be used to provide a guide for this. Simply make sure that every argument made is supported by appropriate evidence.

Please make sure that all references are cited and that all citations have a supporting reference. A common mistake in group work is the omission of references relating to sections of text written by different members of the group, when these separate sections are combined into the final report.

### **How will I do well in this project?**

This project will be assessed in accordance with the marking criteria detailed in the student undergraduate handbook. Thus, doing well is not so much about the proposed solution, but more about the process of arriving there.

## Appendix G Sample Individual Research Pack

### Part 1 - Pre-Session Questionnaire

#### Section 1 - Personal Demographic

Please remember that your responses are kept anonymously.

1. What is your gender? ☐ Male ☐ Female
2. What is your age? \_\_\_\_\_ years
3. Marital status: ☐ Married ☐ Single ☐ Other \_\_\_\_\_
4. Tick the category that describes the highest level completed.

Higher:

- ☐ Doctorate or above
- ☐ Master's degree
- ☐ Undergraduate degree
- ☐ Non-university certificate or diploma

Post-secondary:

- ☐ Post-secondary with secondary school certificate
- ☐ Post-secondary without secondary school certificate

Secondary (High School):

- ☐ Vocational with certificate
- ☐ Vocational without certificate
- ☐ General with certificate
- ☐ General without certificate
- ☐ Basic vocational

Primary (Junior School):

- ☐ Primary completed

Others:

- ☐ Primary not completed and no school education

5. Are you originally from Ningbo? ☐ Yes ☐ No

If not, where are you from? \_\_\_\_\_

#### 6. Occupation

- ☐ Student Degree Major  
\_\_\_\_\_
- ☐ Teacher Division  
\_\_\_\_\_
- ☐ Other Please specify  
\_\_\_\_\_

7. I have been with the university for \_\_\_\_\_ years.

8. I have had previous experience in seminars of this type for \_\_\_\_\_ years.

9. Brief details of any leadership roles at the university.

For the following 3 questions, you must rely on any prior knowledge you may have of the other members of the group (please mention this below) and your ability to judge both yourself and those around you from a first impression.

10. Among the members in this research focus group, I would rank myself in position \_\_\_\_ in terms of probable influence over this research group.

Why?

11. Which respondent do you think will have most influence over the research group?

Respondent No \_\_\_\_

Why?

12. Which respondent do you think will have the least influence over the research group?

Respondent No \_\_\_\_

Why?

## **Section 2 - Communication**

13. What is 'communication' in the context of UNNC seminars?

14. Is communication good?

Why?

15. What leads to poor communication?

16. What leads to good communication?



Rate each of the following by placing a X on the scale of 1 to 5, where 1 = Poor and 5 = Excellent	Poor		Excellent		
	1	2	3	4	5
17. How would you rate communication in seminars at UNNC?					
18. How would you rate <u>your</u> communication in seminars at UNNC?					

### Section 3 – Seminar Approach

By ‘seminar approach’ we mean the ways) in which seminars are conducted and used as an approach to promote learning.

Rate each of the following by placing a X on the scale of 1 to 5, where 1 = Poor and 5 = Excellent	Poor		Excellent		
	1	2	3	4	5
19. Understanding of the UNNC seminar approach by students					
20. Understanding of the UNNC seminar approach by tutors					
21. Knowledge sharing about UNNC seminar approach between students and teachers					
22. Conducting regular communications between teachers and students to discuss the seminar approach, their requirements and implementation					
23. Creating a communication environment that promotes freedom to express opinions in UNNC seminars					

### Section 4 – Factor Identification

24. Identify six factors that influence seminar communication:

I. \_\_\_\_\_ IV. \_\_\_\_\_

II. \_\_\_\_\_ V. \_\_\_\_\_

III. \_\_\_\_\_ VI. \_\_\_\_\_

**WHEN YOU REACH THIS POINT IN THE RESEARCH PACK,  
PLEASE STOP AND TELL THE RESEARCHER**



## PART 2 - POST-SESSION QUESTIONNAIRE

### Section 1 – Group Activity 1 – Mapping Task

25. Using their number, rank the influence of each of the group members over the activity

Influence	Rank	No	In a few words, can you explain this order?
Highest Influence	1		
	2		
	3		
	4		
Lowest Influence	5		

26. Which participants influenced your perspective most?

Influence	Rank	No	In a few words, can you explain this order?
Highest Influence	1		
	2		
	3		
	4		
Lowest Influence	5		

Rate each of the following by placing a X on the scale of 1 to 5, where 1 = Strongly Disagree and 5 = Strongly Agree	Strongly Disagree				Strongly Agree
	1	2	3	4	5
27. I expressed my opinion					
28. My opinion was understood					
29. I listened to other people’s opinions					
30. I understood other people’s opinions					
31. My opinion influenced the outcome					

32. What, if anything, prevented you from expressing your opinion?

## Section 2 – Group Activity 2 – Problem solving

33. Using their number, rank the influence of each of the group members over this activity

Influence	Rank	No	In a few words, can you explain this order?
Highest Influence	1		
	2		
	3		
	4		
Lowest Influence	5		

34. Which ideas, discussed in the problem solving stage, do you think would most improve communication in seminars. Why?

35. Which ideas, discussed in the problem solving stage, do you think would least improve communication in seminars. Why?

Rate each of the following by placing a X on the scale of 1 to 5, where 1 = Poor and 5 = Excellent	Poor		Excellent		
	1	2	3	4	5
36. Understanding of UNNC seminar format by students					
37. Understanding of UNNC seminar format by teachers					
38. Knowledge sharing about UNNC seminar format between students and teachers					
39. Conducting regular communications between teachers and students to discuss seminars, their requirements and implementation					
40. Creating a communication environment that promotes freedom to express opinions in UNNC seminars					

### **Section 3 - Post Activity evaluation**

Having been through the research process, have you altered your view on the following?

### **Section 4 - About the research process**

41. How could the research process be changed to improve communication in the process?

42. What could be done to enable you to feel more comfortable in communicating in this way?

43. Do you think you benefitted from the research process? If so, how?

44. Should the university carry out similar research processes at regular intervals and if so, how regularly?

45. What other processes in the university would benefit most from a review study like this one?

46. What other questions would you have liked to be asked in this process?

47. Any other comments

And Finally!

Rate each of the following by placing a X on the scale of 1 to 5, where 1 = Poor and 5 = Excellent	Poor		Excellent		
	1	2	3	4	5
48. Following this research activity, how would you now rate communication in seminars at UNNC?					

**IF YOU HAVE NOW COMPLETED THIS RESEARCH PACK,  
PLEASE TELL THE RESEARCHER**

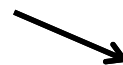
Thank you once again for your time in taking part in this research.

I hope you have found the exercises interesting and useful both personally and as an organisation.

To avoid contamination of the research, please do not divulge the nature of the research activities, but please do recommend participation to other students if you enjoyed it, or found it useful.

If you would be prepared to take part in an experimental programme to test your ideas from this research, please put a big fat X in the box here.

Kind regards,

☐

Trev

## Appendix H Sample Group Research Pack

### TASK 1 – GROUP INTRODUCTION AND DISCUSSION – 5 MINUTES

#### Introductions

Take it in turns to talk, without hesitation, interruption or repetition, for exactly 60 seconds, about your favourite thing(s).

### TASK 2 – INITIAL GROUP DISCUSSION – 15 MINUTES

Discuss and enter a group answer to the following questions:

1. What is 'communication' in the context of UNNC seminars?
2. What is good 'communication'?
3. What is poor 'communication'?

Rate each of the following by placing a X on the scale of 1 to 5, where 1 = Poor and 5 = Excellent	Poor		Excellent		
	1	2	3	4	5
4. Understanding of UNNC seminar format by students					
5. Understanding of UNNC seminar format by teachers					
6. Knowledge sharing about UNNC seminar format between students and teachers					
7. Conducting regular communications between teachers and students to discuss seminars, their requirements and implementation					
8. Creating a communication environment that promotes freedom to express opinions in UNNC seminars					

### **TASK 3 – GROUP MAPPING OF FACTORS – 30 MINUTES**

The researcher will now explain causal mapping and hand you some pieces of paper. On each piece of paper is a factor that may influence seminar communication. These were identified and defined by previous research participants.

10. Your group mission (which you have chosen to accept!) is to work together to draw, on the whiteboard, a causal map to represent how these factors are related (Use black pens only).

### **TASK 4 – GROUP MAPPING REVISION – 20 MINUTES**

11. Discuss, agree and make any changes, deletions or additions to the factors and relationships on this map (Use red pens only). If you add or change any factors, please change the text on the piece of paper and use the blank factor sheets for new factor information.

### **TASK 5 – GROUP IDEA DISCUSSION – 40 MINUTES**

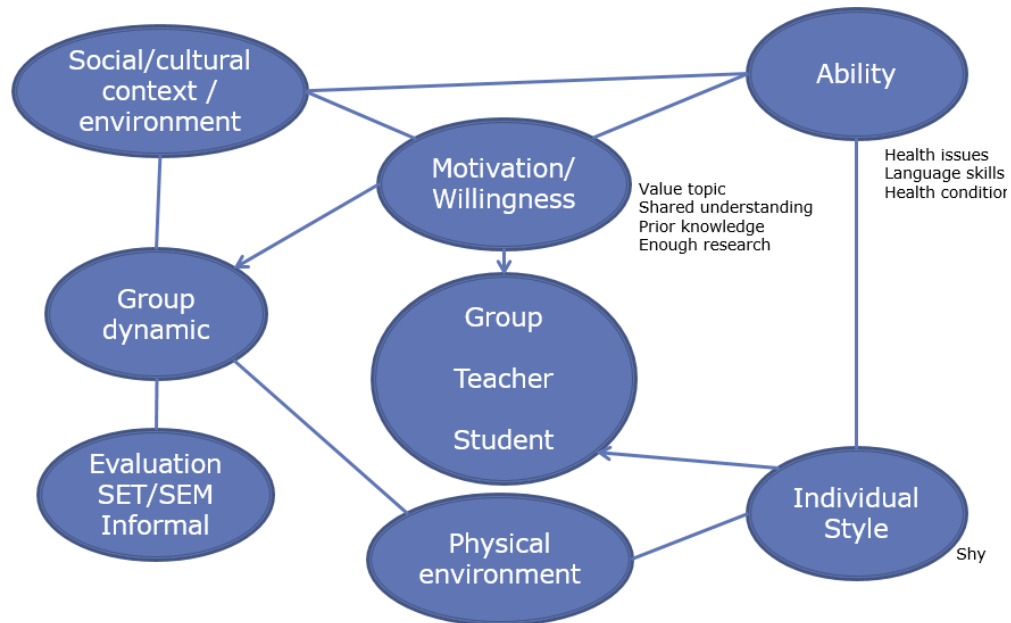
Use the digital pen and notepad for this exercise

12. As a group, take it in turns to propose possible ideas for improving seminar communication. Ideas proposed should be detailed and specific, rather than conceptual or vague. To assist with this, try prefixing each idea with - “If I was a student I would...”, “If I was a tutor I would...”, “If I was an administrator, I would...” etc. Each proposal should be named, defined and numbered in the notepad.

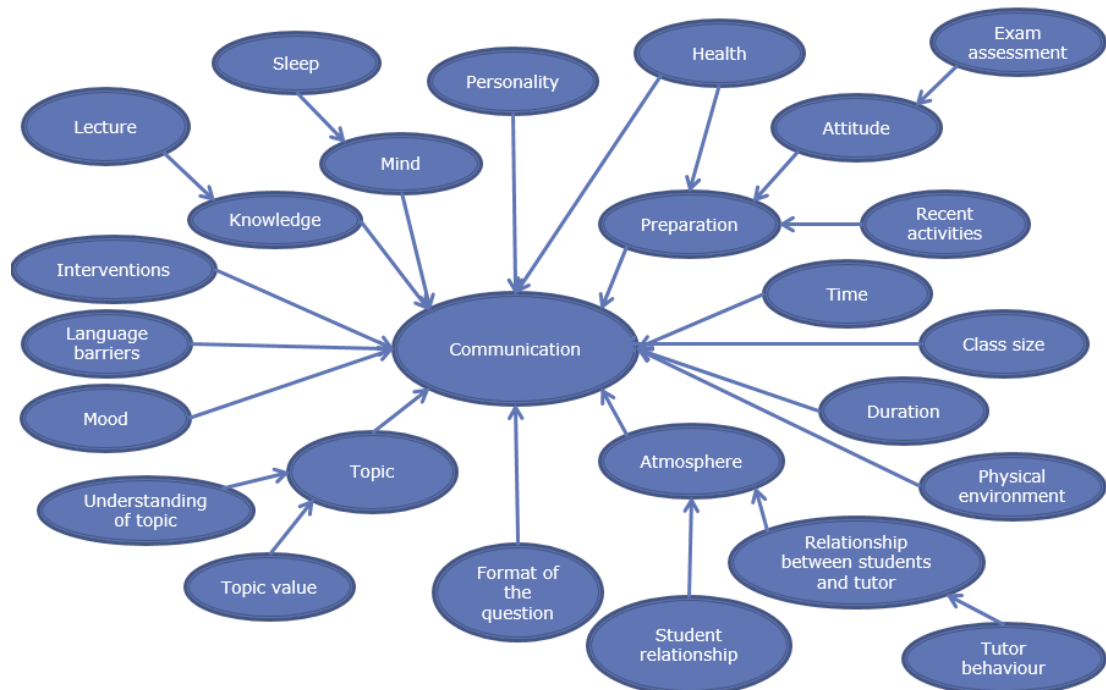


## Appendix I Map Examples

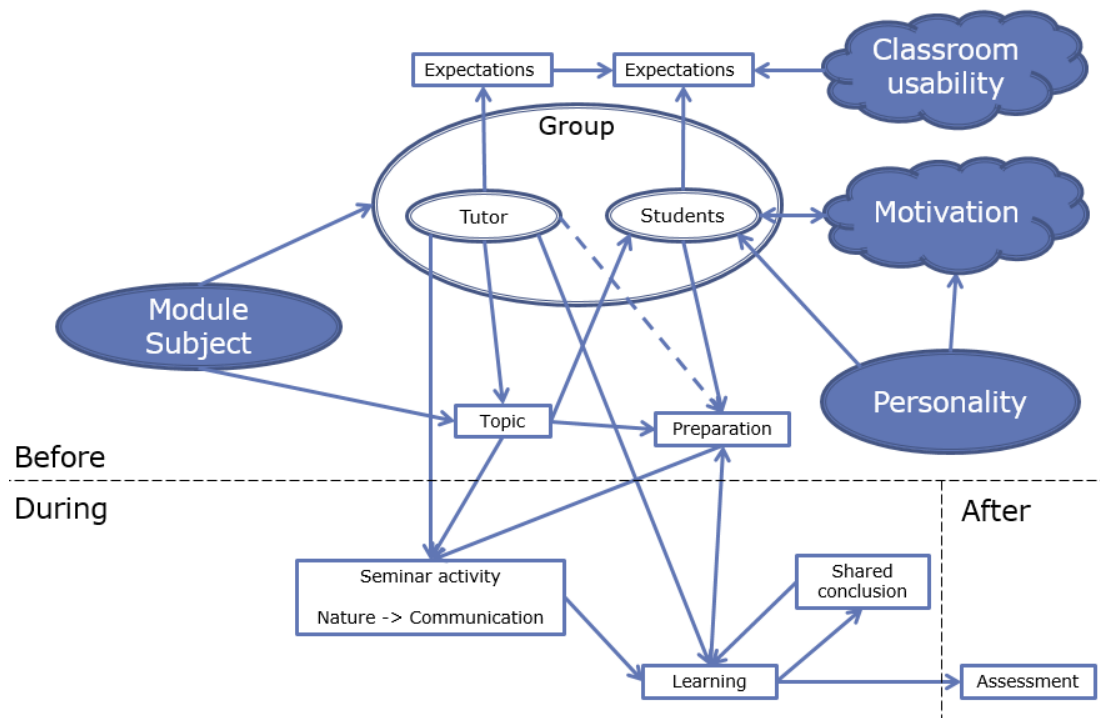
**FG04 Final map**



**FG05 Final map**



## FG06 Final map



[illegible]



## **Appendix J      Sample Coursework**

University of Nottingham Ningbo China

Business School

Academic Year 2014/15 Spring Semester

**Accounting Information System**

Trev Bayley

Group XX:X

Accounting Information System Design Final Report

*GROUP MEMBERS:*

Word count: 5042

## Executive Summary

Accounting Information System (AIS) plays an important role on business operation and is one of the most significant determinants of the corporate success. A well-designed accounting information system not only provide accountants assistance on data collecting and reporting, but also assist the decision-making process for various level of management by providing all desired figures (Lieberman and Whinston, 1975). Regarding study as a special kind of business, the lecturers and students are both inner stakeholders for the business. The accounting information system we designed is going to assist lecturers evaluating the performance of students, making adjustments on syllabus and advising the students next year how to do this project better by observing what the students do in the process and how they allocate time. This proposed system involves a whole designed process from the initial data collection to the final report generation. Though it might not be so precise, rigorous and complicated as the business accounting information system, it provide the students next year assistance of better understanding the whole accounting information design and how to allocate their time more efficiently on this project.

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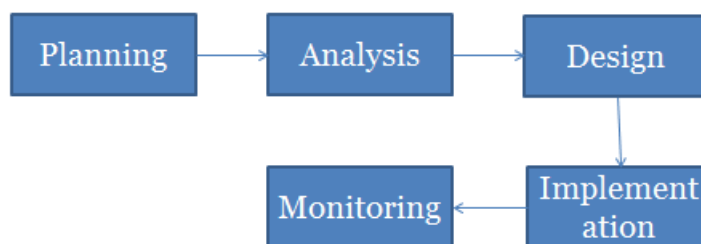
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## Introduction

Accounting information system (AIS) aims to support decision-making process by collecting, entering, processing, storing and reporting data (Romney and Steinbart, 2012). The AIS system we proposed helps students generate account of how their group spent its time on the AIS project. Firstly, two general approaches from literature, which are evidence-based approach and time management, are introduced in the system analysis part. Secondly, in the system design section, the details of the design are demonstrated supplemented by a flowchart and a DFD. It mainly explains how the system work and how it will assist the decision making process. Then, in the data capture part, real time recording method and reproduction method are introduced at the beginning and followed by the three tools mentioned in the system design part. The application of these data capture tools that are iHour, TimeOrg and MrTime are discussed in details including comments about their advantages and disadvantages. Finally, we will briefly explain the practice of focus group and analyze the feedback from interviewees to obtain some possible improvements.

## System Analysis

In the real world, organizations continuously engage with various business processes which mainly composite by a series of structured, coordinated and related tasks and activities that are executed by human beings, computers or machines so as to achieve certain enterprise goals. Effective decision-making is quite significant for organizations on the way chasing corporate success (Romney and Steinbart, 2012). In order to make effective decisions, corporates should be quite precise about the type of decisions they are going to make, the kind of information they are going to use for decision-making, and the method and process of data collection they are going to choose. A well-designed accounting information system not only provide accountants assistance on data collecting and reporting, but also assist the decision-making process for various level of management by providing all desired figures (Lieberman and Whinston, 1975). In the campus life, teachers and students are inner stakeholders for the AIS course. The process of accomplishing this project is being recorded through different aspects and the data will be analyzed in order to help the lecturers figure out how students learn the accounting information system and what suggestion can be made to improve the performance for the students next year. Concurrently, when students next year discuss this project, they will have a relative more clear idea of how to conduct this project and how to make improvements on the base of the former students. The concrete way of how to conduct the AIS project is shown in the figure below.



*Figure 1*



There are mainly 5 stages in the project: planning, analysis, design, implementation and monitoring. During the stages, the occupied time period will be recorded using several methods that will be discussed in the third part of this report. For students, a vital decision they will make is how to allocate their time in their study, in this case, project making. Therefore, a well-designed accounting information system should be adopted in order to assist students in conducting better time management performing better on this project.

## **2.1 Evidence-based approach**

In the medical industry, the evidence-based approach which is frequently utilized because it helps doctors discover better cure method by the clinical practice identifications. In fact, the evidence-based approach has been widely adopted in a wide range of industries such as business and accounting. According to Shortell et al. (2007), these advantages in the evidence-based approach also assist organizations in making effective decision such as the identification of the organizational strategy. Pfeffer and Sutton (2006) suggest that the past accumulated experience assist business in avoiding winding course and going straight to the corporate success. In the project, the proposed accounting information system is based on the time allocation data of the students this year, and the time management method will be discussed in the following paragraph. In order to better explore the characteristics of the decision-making, the various data capture methods will be illustrated and there will be focus group interview to figure out the distinct ideas of other students on the time allocation on the AIS project time allocation.

## **2.2 Time Management**

Time management, the process of planning and practicing control over certain amount of time spent on specific activities plays an essential role in the way of chasing dream for college students. Britton and Tesser (1991) indicate that effective time management positively relates to the excellent performance of college students. Because of the importance of the time management on positive performance and effective decision-making, it is necessary for students to master a good time management skill through the designed accounting information system. The system provides the historical information for latter students and somehow gives suggestions on how to allocate time well on the AIS project conduction. Moreover, the tremendous assistance in the improvement of teaching quality cannot be neglected. Through the data captured by this accounting information system, the module convener can figure out how the students conduct the project and how they study the course, it allows the teachers to provide more specific suggestions for students and at the same time make some adjustments on the course settlement which in return might be better for students to understand and absorb. Therefore, from the perspectives of both students and professors, the time management approach should be adopted in the accounting information system design.

## **System Design**

According to Faulconbridge *et al* (2002), a system is recognized as a combination of

different resources together to serve a certain objective. An effective system design usually can facilitate developers identify and solve the problems efficiently (Romney and Steinbart, 2012). In general, system design consists of two major phases called conceptual design and physical design. To be specific, conceptual design needs to create a system to meet user requirements on the basis of identified problems. This involves three significant steps, which are appraising design programs, defining the user requirement specifications and preparing the final conceptual system design report. For physical systems design, it translates the conceptual design into practical level. Usually, it contains the program design, the input design, the procedures design, the database design, the output design and the control design (Romney and Steinbart, 2012).

This section mainly takes conceptual design into consideration rather than both conceptual design and physical design. To propose an accounting information system to account for students' time spending on AIS project, the purpose of the system needs to be identified clearly and correctly. The objective of this system is to provide useful information about both individual and group time allocation on AIS project for 2016 AIS students. A flowchart is perceived as an analytical and graphical technique that can depict some aspects of the information system in a brief and logical way (Romney and Steinbart, 2012). In other words, the system flowchart describes the relationship among the system input, processing, storage and output intuitively. Below is the flowchart of the conceptual system design which is about how AIS students spend time on AIS project.

As can be seen from the following flowcharts, there are several procedures of performing this system. First of all, three apps of recording time on smart phone are utilized to collect time spending data that are iHour, Timeorg and MrTime. These three different tools have their own advantages and disadvantages, which has been discussed in previous section. Secondly, when data is edited on the smart phone, it can be recorded by the smart phone automatically and stored in the database respectively. For example, if students use iHour to record their individual time, every period of time they have already recorded will be stored in iHour time database. Thirdly, it is quite conducive to choose Microsoft Excel to gather all the data collected. This is because same format data in MS Excel could be imported to Microsoft Access directly. After entering time spending information into Microsoft Excel, the software will save the data and summarize the related data. For instance, the total time for individual is required as well as group total time spend on the project. In Microsoft Excel, inputting 'sum=( )' command in the expected cell and the bracket contains cells with single time recording. Then, the expected cell will display the total time information. Besides, students are required to collect and record their time spending information duly and upload associated data once a week. These data are stored in weekly data file. It is necessary to emphasize that students need to separate their individual time and group time when they record. In addition, Microsoft Access database about time allocation information will be updated according to weekly data file and generate an up-to-date access database. Finally, Microsoft Access is used to generate three different reports based on different classifications. They are students group and individual reports, students' activity reports and students' stage reports.

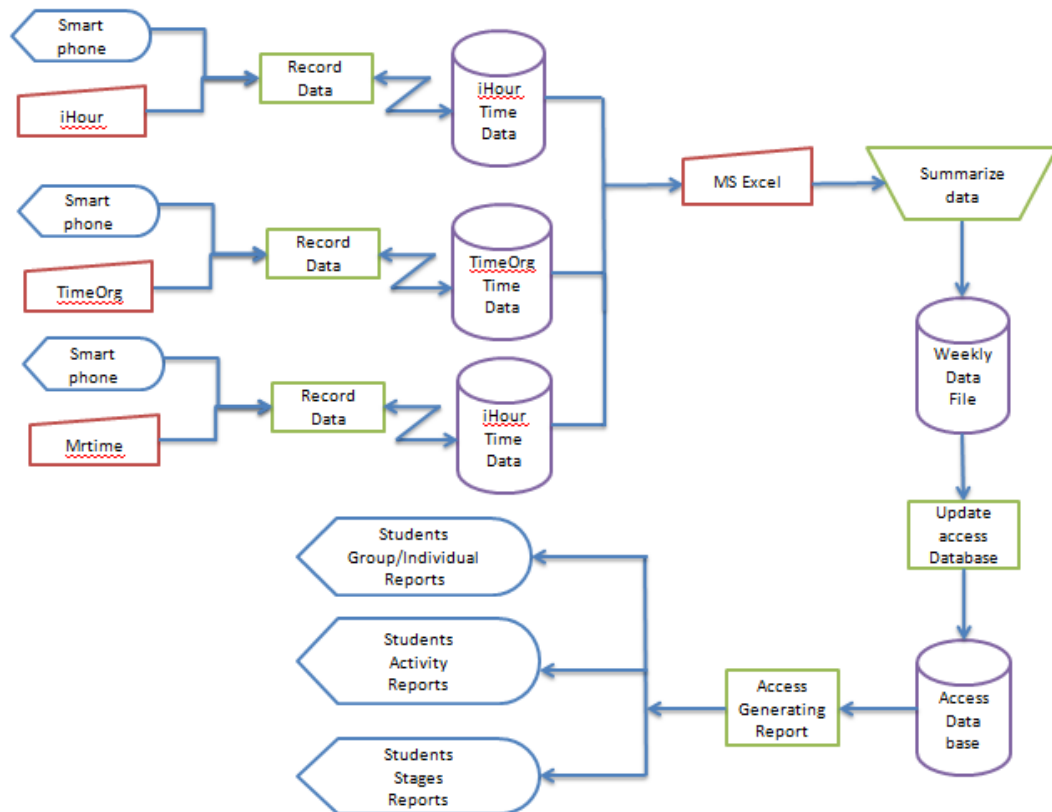


Figure2: Flowchart of System

The above three outputs provide effective and efficiency information to account for how students spend their time on AIS project. The first one is students group and individual report. This report is relevant to how much time the individual and the group spend on the AIS project. Furthermore, it is convenient to compare time spending among individuals and find the efficiency time allocation. Another one is students' activity reports which summarize the report based on activity level. Through this report, time allocation on every activity is explicit. Besides, it is easy to get the conclusion of which activity occupies the maximum time and which activity need minimum time. The final report is called students stage report. All the activities are divided into three stages; they are planning, analysis and design. This report provides information about how much time spend on different stages, which is helpful for further analysis.

To record the time students spent on the AIS project, the data flow diagram is accepted as a useful technique at the beginning of the system design. It illustrates the rough initial design of the whole data flow system. The data flow diagram usually based on the practice experience of the group members. It is easily to divide the data flow diagram in to several significant steps so that group members are able to start the project follow the data movement in the data flow diagram. However, the information and data, which are collected during the further research and focus group, will improve the data flow diagram. Then group members are able to create system flowcharts that contain more details to display the data flow in the system.

The level 0 data flow diagram is described as the top-level data flow diagram that show the main data flow process of the AIS project. It is accepted as the overview of the whole accounting information system. The movements of data started from data source to the destinations are the complete process of the data flow diagram. During the movement process, data will be stored, updated and analysis. Every step that specialized in different ways of processing the data consist the whole data flow system.

The whole process of the data flow diagram can be divided into different steps that are used to deal with the time data in different ways. The first step of the data flow diagram is the data collection, which is also described as the data source of the data flow diagram. According to the figure below, there are three useful tools to collect the time data. The TimeOrg app, the iHour app and MrTime app, which are widely used among smart phones, are convenient for group members to record the time they spent on the program during their daily life and organize the data easily. That is the reason why we choose these three apps. Then the data are organized in the Microsoft Excel on the computer, which is convenient to store and directly import into access database. After data organizing, students will update the database before importing the data into the access database. With the updating data in the access database, students are able to make chart outputs. The final step is to make the general reports. The individual reports are only available for individual students while the general reports, which contain the group time spent on AIS project, are sent to tutors. In addition, every steps of the level 0 data flow diagram can be described as a complete and individual data process. The data flow diagram could be divided into altered levels of data flow diagram, which contain more details to show a more detailed data movement process of the system at different level (Romney and Steinbart, 2012).

## **Data capture**

### **4.1 Literature Review**

An efficient time allocation method tends to link with a high academic performance of students. Over the last decades educational economists has been interested in evaluation of various time allocation methods. Schmidt (1983) used to collect 216 students information about their time allocation from the experiment. In the literature, the method of real time recording is identified as a useful tool for the reason that it records the data produced at the moment the event occurs (Bratti & Staffolani, 2002). However, inputs of time are difficult to control, which is likely to cause an inaccurate result in real-time recording. Therefore, a second method called reproduction is accommodated.

#### **4.1.1 Real-time recording**

Real-time recording can records the start time and end time of an event and calculate the duration or start only to record the duration using a tool like a stopwatch. This method produces accurate data that is helpful for users to reflect the real time spend on an event. It is widely used in computerized systems that can also support the flexibility to record numerous features of behavior such as frequency interval, delay period and sample recording (Miltenburger, 1999). However, there are some drawbacks to limit the function of it to support our system alone and improvements are needed.

### **4.1.2 Reproduction**

If the inputs of data cannot be totally control or processed in time, it is likely to encounter a loss of real time data. This is probably caused by a pause of activities or some unexpected interruptions (Ko, 2002). When this happen, users need to reproduce the time record by recalling the activities and apportion time to a specific one. For example, a student is asked to recall his/her time allocation to group project in seminars. Contrasted with real time recording that records time anytime, the reproducing process is usually happened at a regular time. It seems to be less accurate because memory can be distorted by significant changes in the demonstration or recall environment (Conrad, 1968). However, reproduction is more practical in real life because real time recording requires a high consciousness and constant attention.

## **4.2 Data capture tools**

It is convenient for students to record individual time spent in their group project using their mobile phones for the prevalent use of mobile devices among students. We provide three applications for students that are iHour, TimeOrg and MrTime. Generally, iHour and TimeOrg are compatible with ios system and MrTime is compatible with Android system.

Having collected all the individual time records, Microsoft Excel is used to summarize all the data every week. At the end of the project, we use Microsoft Access as database to produce reports. These two softwares will not be demonstrated in details in this part.

### **4.2.1 iHour**

iHour is a useful and free time planning application that is compatible with iPhone, iPad and iPod touch. It can be used to plan AIS group project time consumption and record project progress at the same time.

In the main interface, one can simply add projects by touching the “plus” bottom. Then in the edit page, project name, planning time, notification and project type can be chosen. Once the project is established, the time spent on it can be recorded every time people finish an activity with the actual date and time duration. During the process, the accumulated time is shown in the main interface after the project name. It also indicates project beginning date and duration.



Figure 3: Screen shot of iHour: Interface

The details of each project can be checked such as the average time spend every day, every week and every month respectively and additionally, a bar chart is provided. Furthermore, in the analysis interface, a pie chart is offered to demonstrate the total time spend and the percentage of each project.

Although iHour cannot record the details of each activity under a project, there are still many benefits of this application such as the clear interface, the easy-to-use operation and the efficient data analysis. In order to offset the disadvantages, the project created at the beginning can be divided into three parts, which are “AIS Group Project Time” and “AIS Individual Time”. “AIS Group Project Time” includes the group meeting and seminar time and “AIS Individual Time” is used to record individual activities that not being done collectively. Because these two parts are not intersected, the time can be simply added together to obtain a total time.

### Limitation:

iHour can only records the whole event name but the details of each transaction. As a result, some notes and details might need the supplementary of memorandum.

### 4.2.2 TimeOrg

TimeOrg is a free application that can apply to iOS system and very useful tool to record the data spent in AIS group project. It has three interface including Start/Stop, History and Settings. When the task starts, the user can swipe the screen to start and pause in the first interface. There are four display button consists of Time, Work, Remain and Week (or Month). When the user presses the button of Time, it will show the date, time

and days of the week. The Work button shows the particular task time spent once. The Remain button shows the timekeeping when the user starts or pauses. The last button shows accumulative time spent in a week or month which can be set in the Settings interface. Besides, the user can summarize, edit and delete efficiently the starting and finishing time, time duration and detailed description of the task in the History interface. It can also record some tags such as the type of the day and location. It is easy to compare the time spent each time. In addition, the last is Settings which is normal in all applications and user can set workings hours, maximum working time, required work break time and types of calculation including week and month. It can also delete all data directly.

It is very simple to use this app and the projects can be created and edited easily in it. However, one limitation is that it is not free for a backup which means user needs to pay for upgraded Full Version with no ads and including exporting and backup features. It does not directly support Excel or HTML format and it has difficulties in inputting data into database by mail or Bluetooth.



*Figure4: Screen shot of TimeOrg: Interface*

### 4.2.3 MrTime

MrTime is a free application that can apply to both iOS and Android system. This app also supports recalling method and real-time method in it. It is composed of three interfaces. User can start, edit and delete a new record, look through record history, and choose the type of task such as study, reading, sleep, sports, surfing, and housework and many other types in the main interface. There is also a time count- down function in this app. The second interface is the pie chart statistics showing the different types of task by daily, monthly and yearly. User can look at the percentage of the using time in different projects. The last interface is settings. All the records can be synchronized to software called Youdao Cloud Notes.

It is very simple to use and user can edit and note the details of the tasks in the record. If user forgets to start or stop an activity, the missed data can be added finally. Besides, both iOS and Android system can support this application. However, the significant limitation is that it only supports Chinese as its official language in the context.



Figure 5: Screen shot of MrTime: Interface

### 4.3 Testing and improvements

As a test for the process of the planned Accounting Information System group project, group members firstly used the data capture tools in a week period in order to understanding the feasibility and practical utility of the data capturing tools. This test also aims to improve the system development lifecycle. For testing, each member of the group downloaded different data capture tools into their smartphone choosing from iHour, TimeOrg and MrTime and these apps were used to record time duration of the activities throughout a week. After the one week process, there are some advantages and problems.

#### Advantages:

Feasibility. Each application has its useful functions on recording time and activities.

Convenience. All the applications are easy to use and it is convenient to look for the record history.



**Problem:**

Some members are likely to forget to start or end the time count-down when record the time duration of the activities. One app cannot add missing data afterwards which leads to the loss of the data.

Some applications were not running well in some smartphones because of the old system.

The rectified individual data has been exported into MS Excel document from different applications. The excel data has also been finally exported into MS Access database. These reports are included in three outputs in Appendix B.

In addition, if some students cannot use such applications for their study, stopwatch, pen and paper are also basic data capture methods. It can record time duration and data of the activities. These original data can also be exported or submitted for auditing purposes.

**Focus Group**

Feedback information towards our system for AIS group project help us to detect problem of system, as well as the piece of work it is doing well, so that we can have an idea about how to improve the quality of the system. One of the useful methods to collect feedback is focus group as it provides us with rich qualitative information. In the group, five to ten participants express and share their attitude, opinions and experiences which makes possible obtaining their verbal information and non-verbal information simultaneously. Also, participant's opinions contribute to evidence-based approach which enables researchers to convert fact into useful information and then make decisions based on information (Marr, B., 2009). Thus, we use focus group to collect feedback from AIS students to estimate the effectiveness and to detect limitation of our system.

The focus group is in the last AIS seminar. It begins with a brief introduction of the proposed system by the facilitator and followed by the four questions towards the participants. Observers are responsible to observe and take notes for the whole process. The notes should record detailed information which can contribute to understand participants including the order of answering questions, non-verbal communication such as facial expression and body motion.

**Four Questions:**

1. Do you think the system can provide you with useful information?
2. Do you get used to record time for your group project? If you have, how you collect the data of time spent?
3. When collecting your "one data", do you meet any problem, which might be made by the limitation of your approach?
4. Does the process of your group project perform as expected?

Also, information collected from focus group is arguably accurate and reliable for three main reasons. First, question designs both discussion and interview which help generate a participative and friendly environment. In our case, the first two are interview-type questions and the others are discussion-type questions. Boddy (2005) argues that it is easier for participants to show their agreement and disagreement in the context of group discussion. On the other hand, group interview helps members more willingly to answering questions. Furthermore, it is beneficial to arrange cultural insiders, as observers since similar background with participants enables them understand the focus group more quickly and with little effort. As Eckhardt (2004) demonstrated that research partners from local context has a capability to identify non-verbal behavior and interpersonal relationship. In our case, such understanding seems particularly important as China society attaches high attention in terms of implicit interpersonal relations and therefore develops a sophisticated network of relationships, which cultural outsiders cannot learn in a short time period.

After conducting the focus group we make some adjustment to the system including diversifying methods to record data, longer the collection time from three days to one week and attempt to raise motivation of participants to record data. However, some difficulties with regard to memory accuracy and motivation to conduct experiment are hard to overcome. Time limitation is another problem. Seminar four starts quite late and we are not allowed to organize the focus group and collect feedback ourselves in this coursework.

Here is a brief summary of the conversation process, which is based on questions, and appendix 3 will attach the complete notes of focus group. Before observing the focus group, we anticipate that there is a demand for students in AIS module to have an accounting system to record the time of group project because it can be used for time management and reflection purpose while in reality one of the participants think there's no need to record exact time used up because as year three students, they are supposed to have a rough concept in term of how a coursework processes. Thus, it may be not necessary to allocate group project time in advance if students all know how to process a group project. Besides, it is assumed that smartphone and laptop bring convenience to online discussion for group members whereas in fact many participants complain on discussing on Wechat as Moments on Wechat and messages from other friends can distract them from concentrating on group work. More problematically, in question one, one of the students argues that it is nonsense to compare time between groups as some groups may perceive AIS group project is more difficult than DDI group project so that they decide to spend more time on it while others may just think the other way round. Also, she argues that comparison between groups is not as useful as people might think because it disturbs their original plan and can be annoying. As for question four, when asking participants the suggestion to improve the system, many students says that lack of interest and motivation to record time regularly can make system obsolete. Some incentives should be built into the system so that users will stay in the APP. One participant suggests that an alarm clock can be created as a reminder to record time. However, it cannot be achieved in laptop anyway. Complete research on focus group will be presented in the Appendix D.

## **6. Reflection and conclusion**

### **6.1 Reflection on differences**

#### **Reflection on Outputs (Appendix A)**

As can be seen from Appendix A, the final three outputs are slightly different from the initial three outputs. First of all, the way of recording individual time on every activity has been changed. To be specific, start time and end time are both required and use this time to calculate the duration time initially. However, it is discovered that the duration of time can be shown directly by using mobile phone applications. Therefore, the final output simplified the procedure of recording time. Secondly, initially we plan to use minutes as our time units. However, during the real recording period, minutes seem not practical because the time spending is much more than the expectation and time spent on different activities vary considerably. This causes problem such as closely vertical axis when produce the charts. Then the hour is adopted as the new time unit instead of minutes. Finally, line chart is abandoned in the final chart compared with the draft outputs. This is because histogram and bar chart can reflect relevant information more directly and intuitively.

As for the attest statements, our group would like to refuse to sign it. Although most of the time recordings are fair and true, but some leaks and problems still remains caused by negligence or lassitude. That reflects our system still need to be improved to be more convenience and use-friendly.

#### **6.2 Reflection on Gantt Chart (Appendix B)**

Similarly, Appendix B indicates some differences between the initial Gantt chart and the final Gantt chart. Firstly, activities have been adjusted slightly. System design as a sole activity in the draft Gantt chart is divided into more specific activities such as system define, conceptual design and data capture method design in the final Gantt chart. Besides, the activity data collection is disposed because this activity is not defined well and it exists during the whole process of the project and might cause confusion to users. In addition, in the final Gantt chart, the columns of budget time and actual time are added for comparison.

In respect of time recording difference between budget and actual time, there is more time spent on reading and researching and conceptual design in practice than that in budget. For reading and researching, the reason probably is that we underestimated the difficulty and complexity of the project and did not allocate much time on this part. As for conceptual design, it is likely that we did not do enough research on related topics that leads us to a confusing situation where we have to put a large amount of time to figure it out.

## **Conclusion**

In conclusion, this report mainly provides a simple accounting information system about how students allocate their time on AIS project. Initially, the report analyzes the system through two aspects, evidence-based approach and time management methods. Secondly, it states the conceptual design of the system by using flowchart and dataflow diagram to interpret. Thirdly, three data capture tools iHour, Timeorg and MrTime are introduced. Not only the method of application of these three tools is described, also their advantages and disadvantages and testing results are indicated. The fourth section contains information which is collected from focus group. The final part represents the reflection on the differences between the initial system design and the final system design. It is expected that this simple accounting information system could help 2016 AIS students to manage their time spending. Besides, it is believed that only when the system put into practice, its indeed benefits and crisis will be revealed.

## Appendix A Outputs

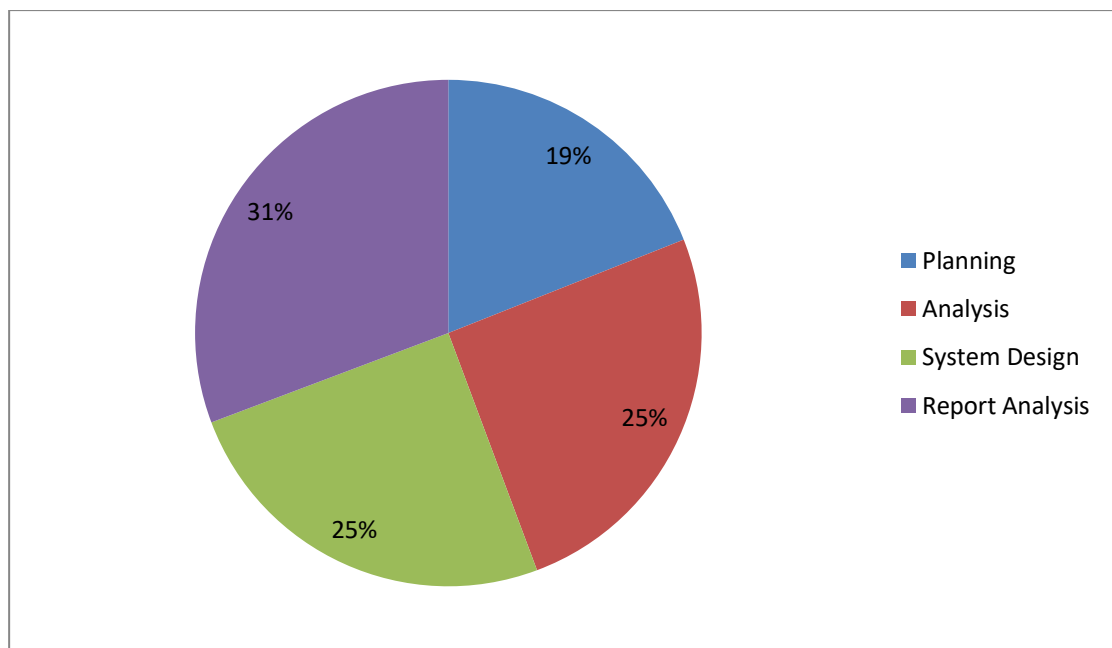
### Final Outputs:

#### Output1

The first output summarizes the individual time spending on the four different stages: planning, analysis, system design and report analysis. These data can be analysed to manage the overall time spending and control the control the pace of the project.

#### AIS Group Project Individual Time allocation

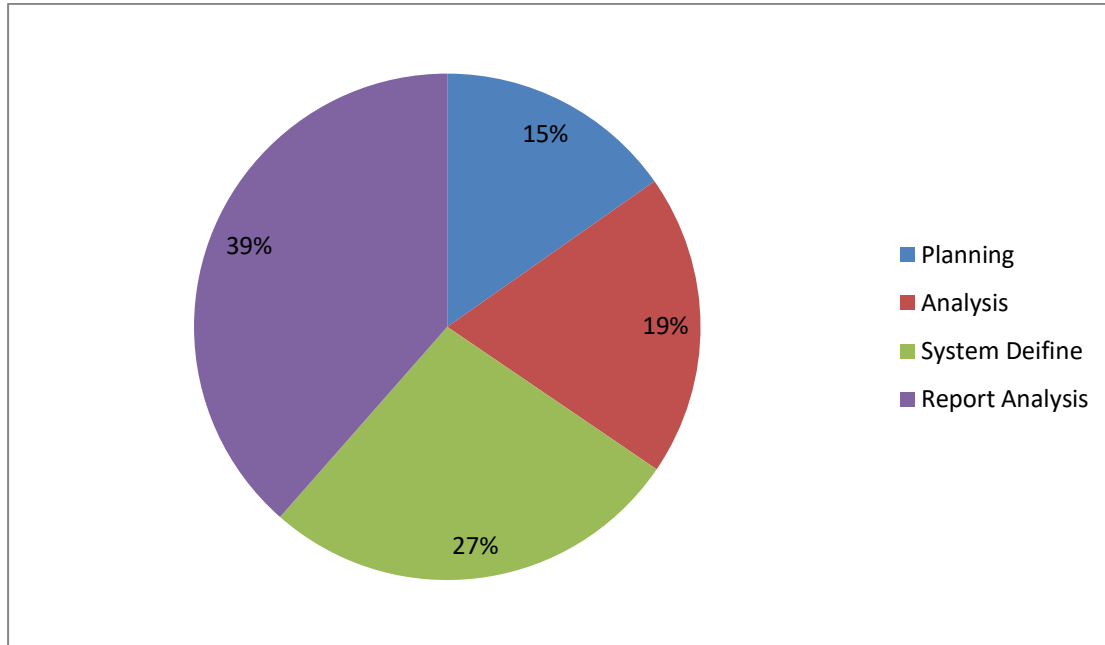
Stage	Time of Duration (hour)
Planning	5.25
Analysis	7
System Design	6.9
Report Analysis	8.5



#### AIS Group Project Individual Time allocation

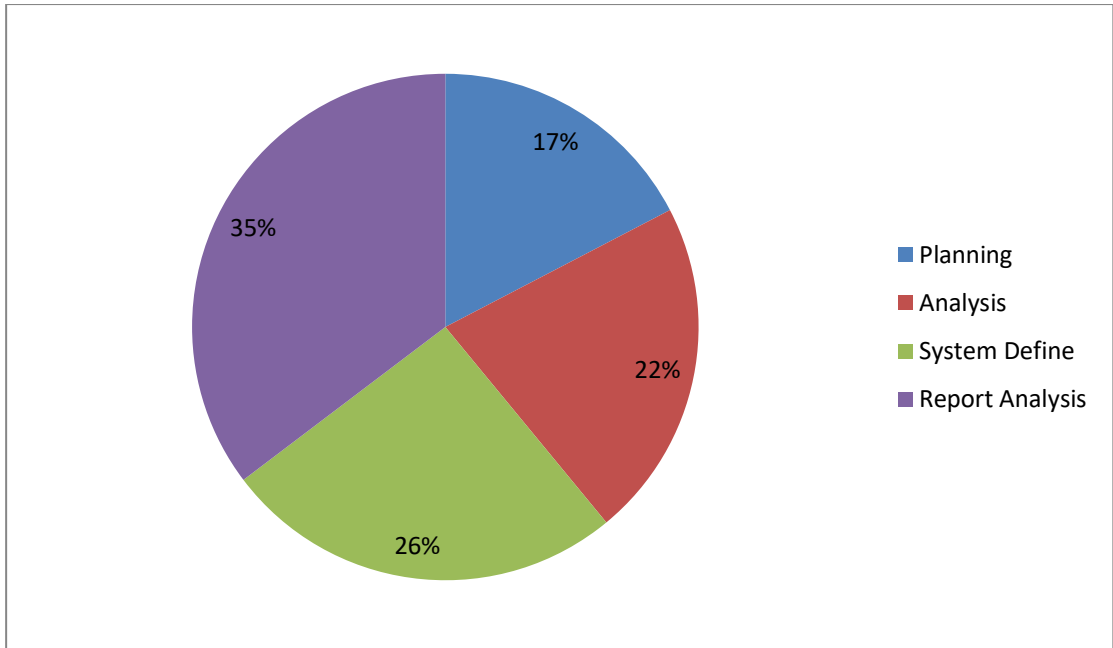
Stage	Time of Duration (hour)
Planning	4.75

<b>Analysis</b>	6
<b>System Design</b>	8.4
<b>Report Analysis</b>	12



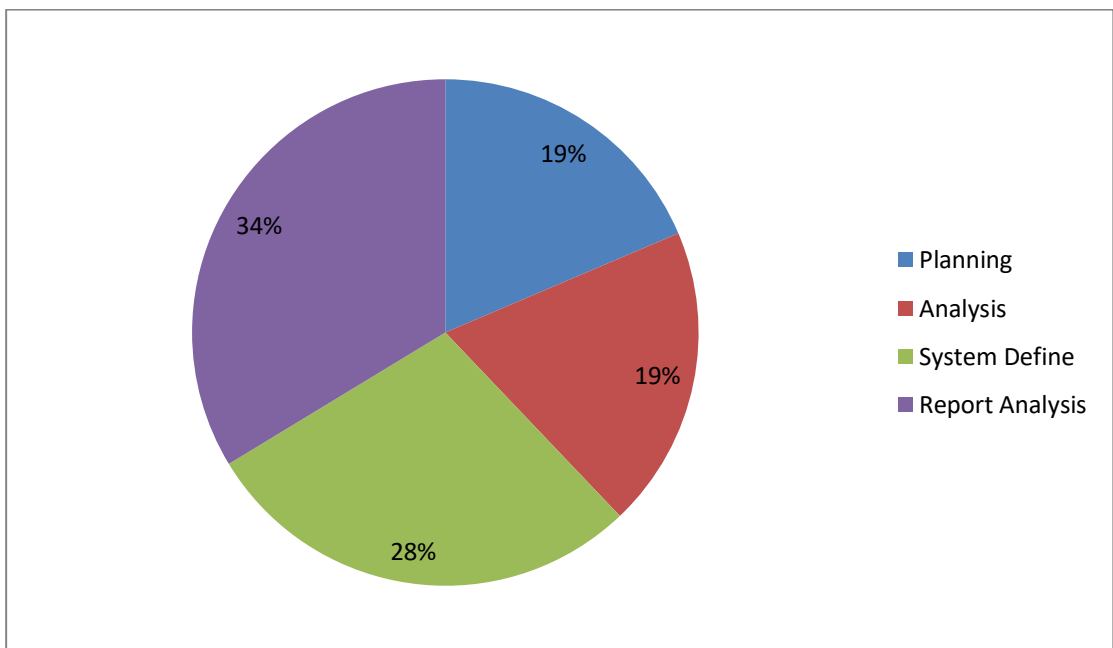
#### AIS Group Project Individual Time allocation

<b>Stage</b>	<b>Time of Duration (hour)</b>
<b>Planning</b>	4.67
<b>Analysis</b>	5.83
<b>System Design</b>	6.9
<b>Report Analysis</b>	9.5



AIS Group Project Individual Time allocation

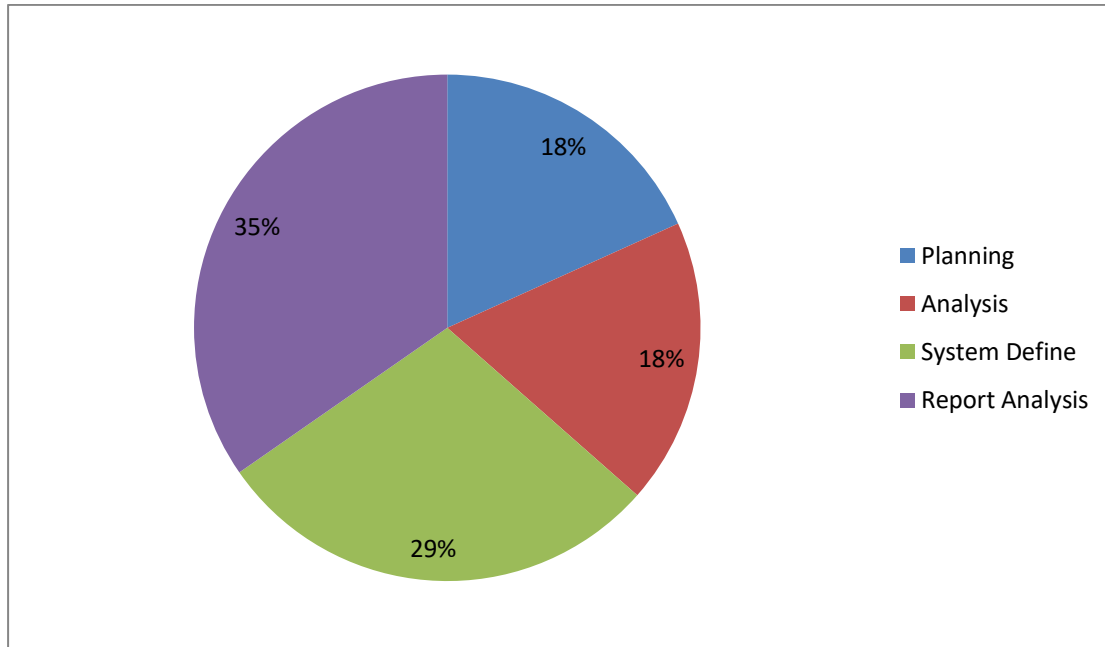
Stage	Time of Duration (hour)
Planning	5.3
Analysis	5.5
System Design	8.1
Report Analysis	9.6



AIS Group Project Individual Time allocation

Stage	Time of Duration (hour)
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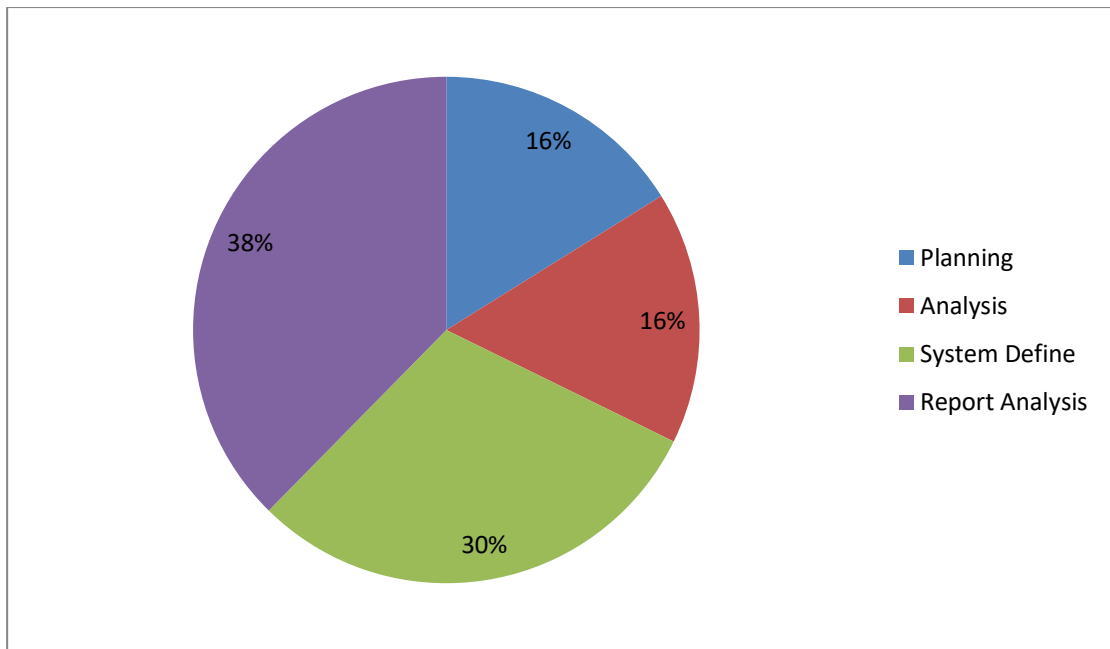
<b>Planning</b>	5
<b>Analysis</b>	5
<b>System Design</b>	7.9
<b>Report Analysis</b>	9.5



#### AIS Group Project Individual Time allocation

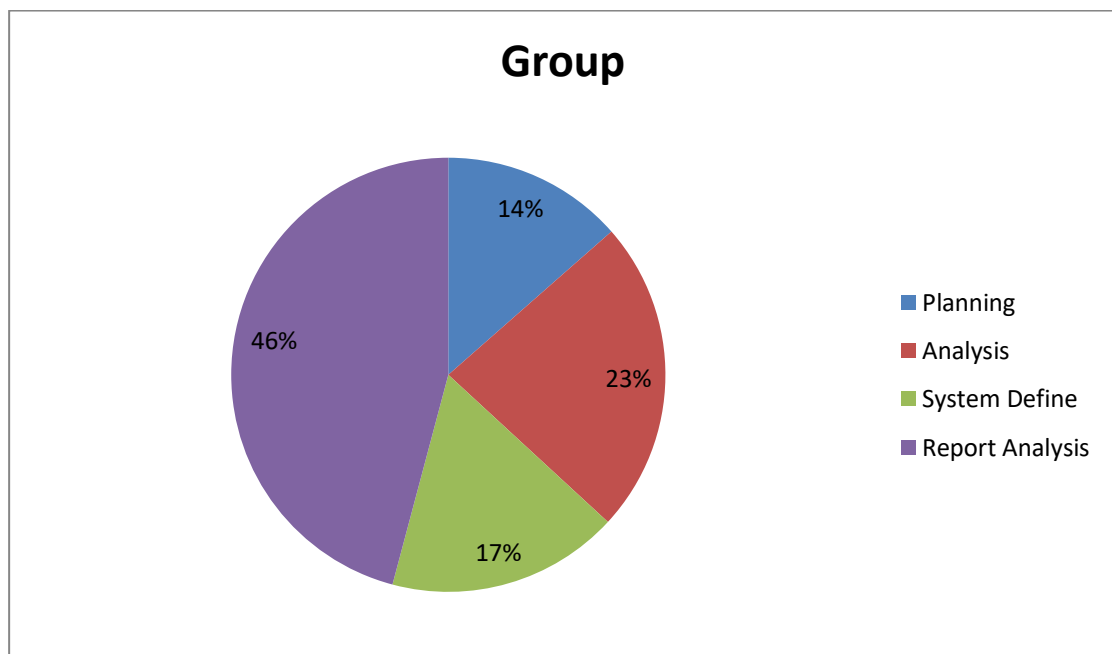
Stage	Time of Duration (hour)
<b>Planning</b>	4.5
<b>Analysis</b>	4.5
<b>System Design</b>	8.4
<b>Report Analysis</b>	10.5





### AIS Group Project Overall Time Allocation

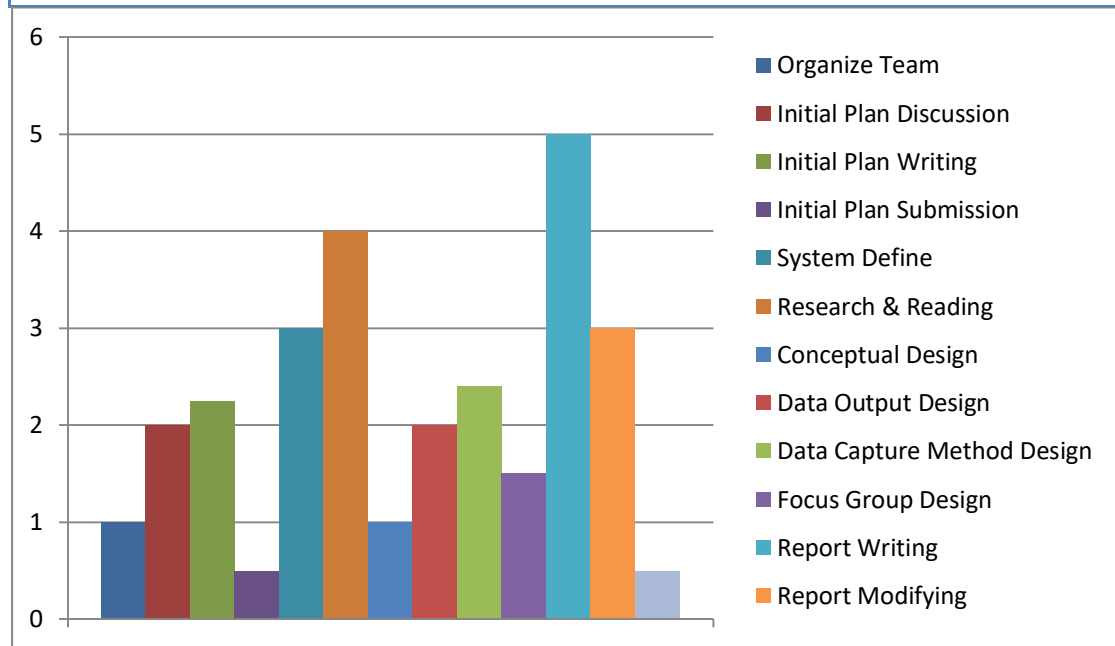
Stage	Time of Duration (hour)
Planning	9.47
Analysis	16.33
System Design	12.1
Report Analysis	32.1
Total	70



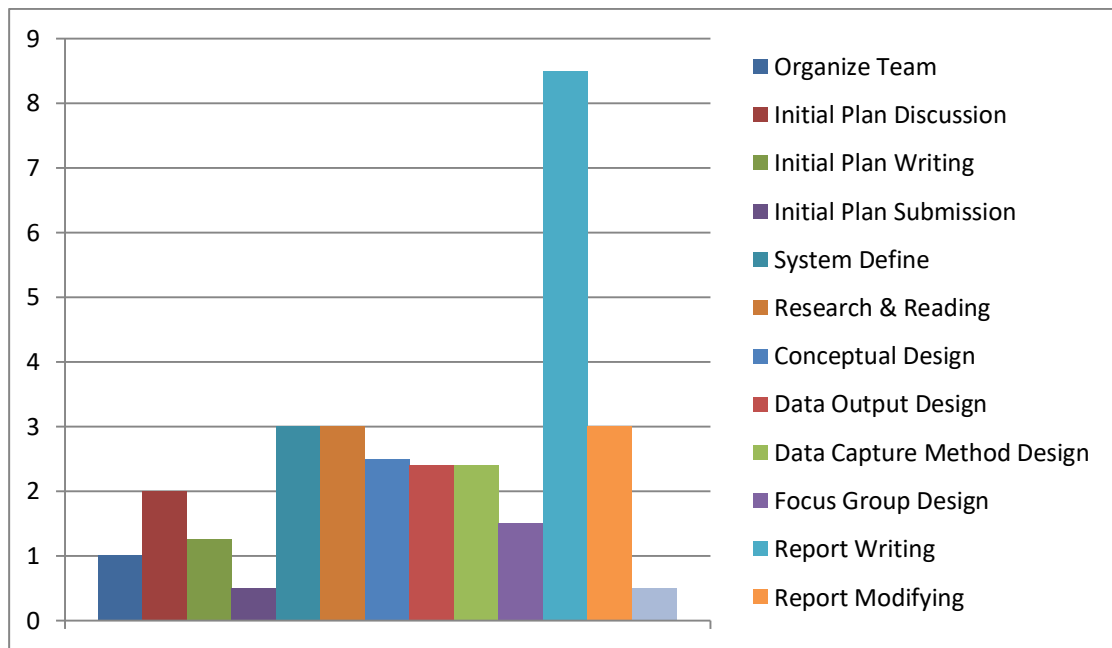
## Output2

The second output records the time spending information about how each individual spends time on every activity and their total time spending on the whole project. This information could help users to compare the differences of individual's time allocation.

Name:	Student ID Number:
Activity	Time of Duration (hour)
Organize Team	1
Initial Plan Discussion	2
Initial Plan Writing	2.25
Initial Plan Submission	0.5
System Define	3
Research & Reading	4
Conceptual Design	1
Data Output Design	2
Data Capture Method Design	2.4
Focus Group Design	1.5
Report Writing	5
Report Modifying	3
Report Submission	0.5

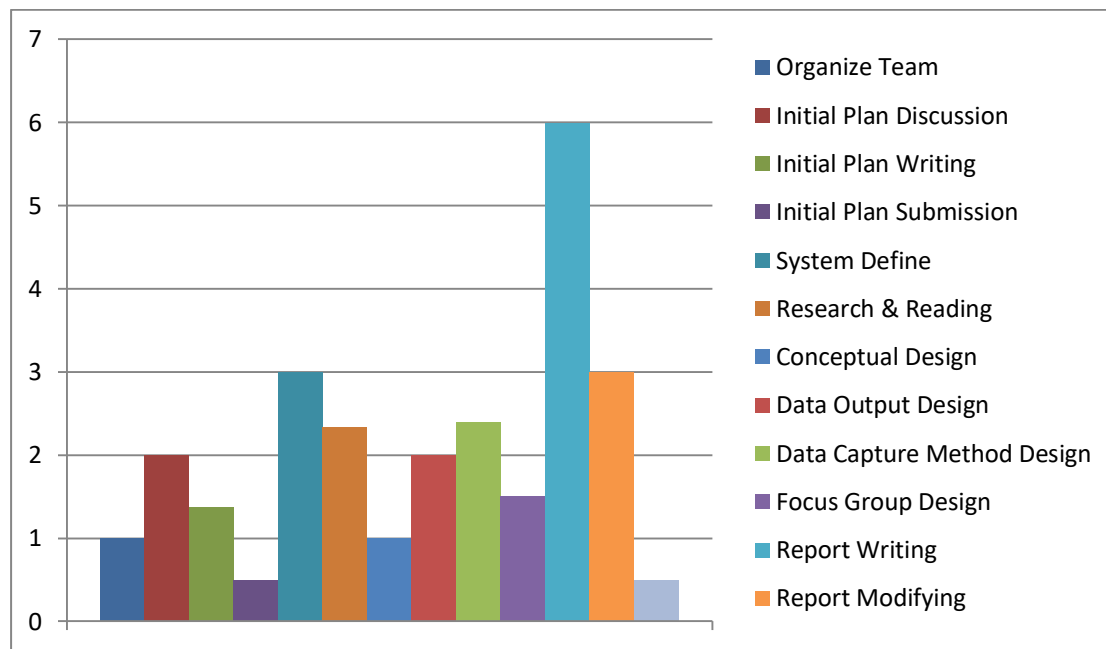


Name:	Student ID Number
Activity	Time of Duration (hour)
Organize Team	1
Initial Plan Discussion	2
Initial Plan Writing	1.25
Initial Plan Submission	0.5
System Define	3
Research & Reading	3
Conceptual Design	2.5
Data Output Design	2.4
Data Capture Method Design	2.4
Focus Group Design	1.5
Report Writing	8.5
Report Modifying	3
Report Submission	0.5



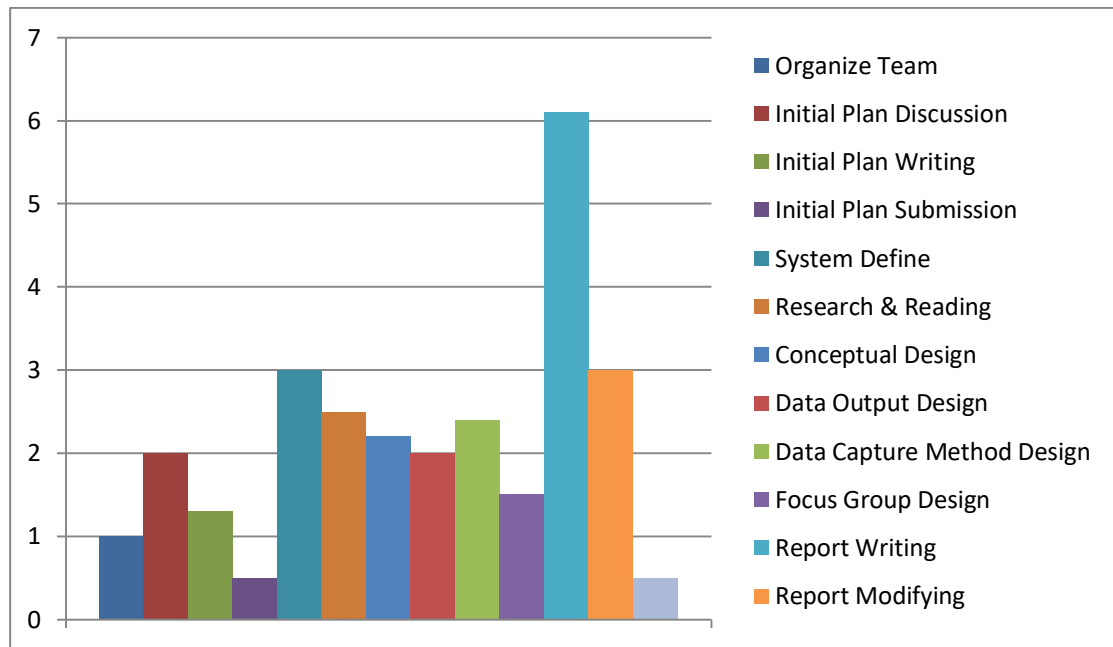
Name	Student ID Number:
Activity	Time of Duration (hour)
Organize Team	1
Initial Plan Discussion	2
Initial Plan Writing	1.37

<b>Initial Plan Submission</b>	0.5
<b>System Define</b>	3
<b>Research &amp; Reading</b>	2.33
<b>Conceptual Design</b>	1
<b>Data Output Design</b>	2
<b>Data Capture Method Design</b>	2.4
<b>Focus Group Design</b>	1.5
<b>Report Writing</b>	6
<b>Report Modifying</b>	3
<b>Report Submission</b>	0.5

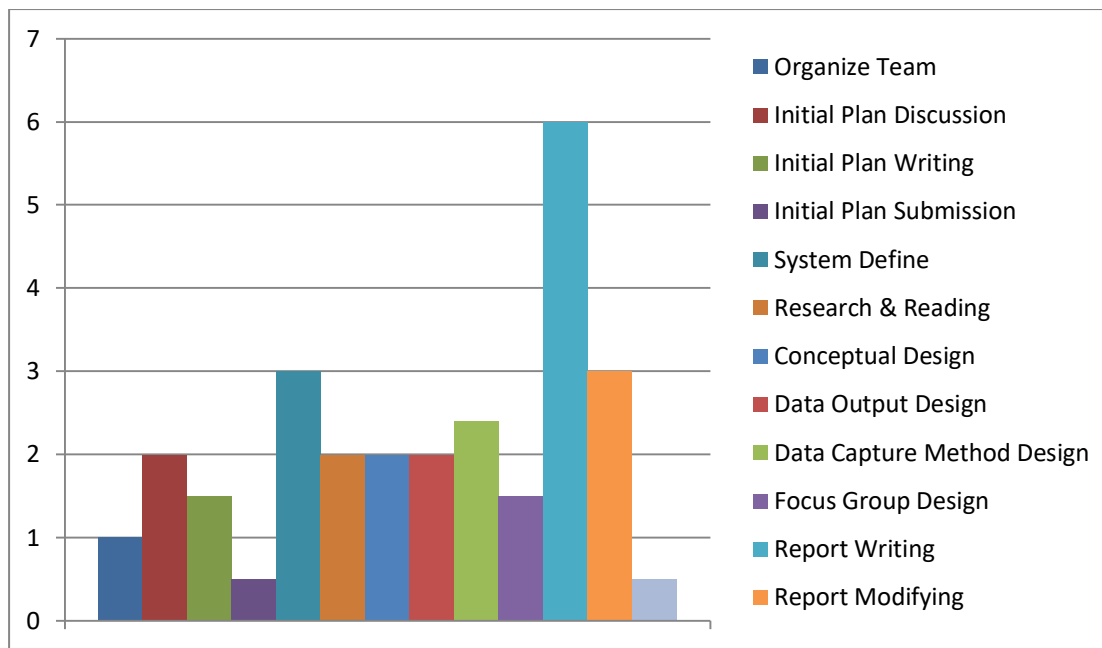


<b>Name:</b>	<b>Student ID Number:</b>
<b>Activity</b>	<b>Time of Duration (hour)</b>
<b>Organize Team</b>	1
<b>Initial Plan Discussion</b>	2
<b>Initial Plan Writing</b>	1.3
<b>Initial Plan Submission</b>	0.5
<b>System Define</b>	3
<b>Research &amp; Reading</b>	2.5
<b>Conceptual Design</b>	2.2
<b>Data Output Design</b>	2
<b>Data Capture Method Design</b>	2.4

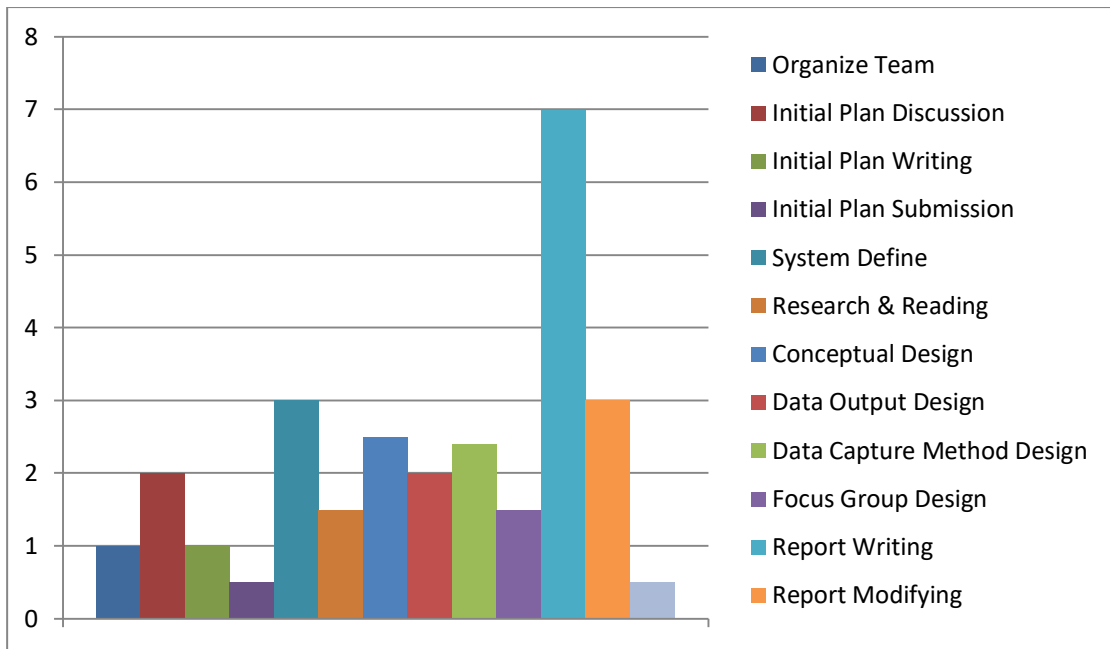
<b>Focus Group Design</b>	1.5
<b>Report Writing</b>	6.1
<b>Report Modifying</b>	3
<b>Report Submission</b>	0.5



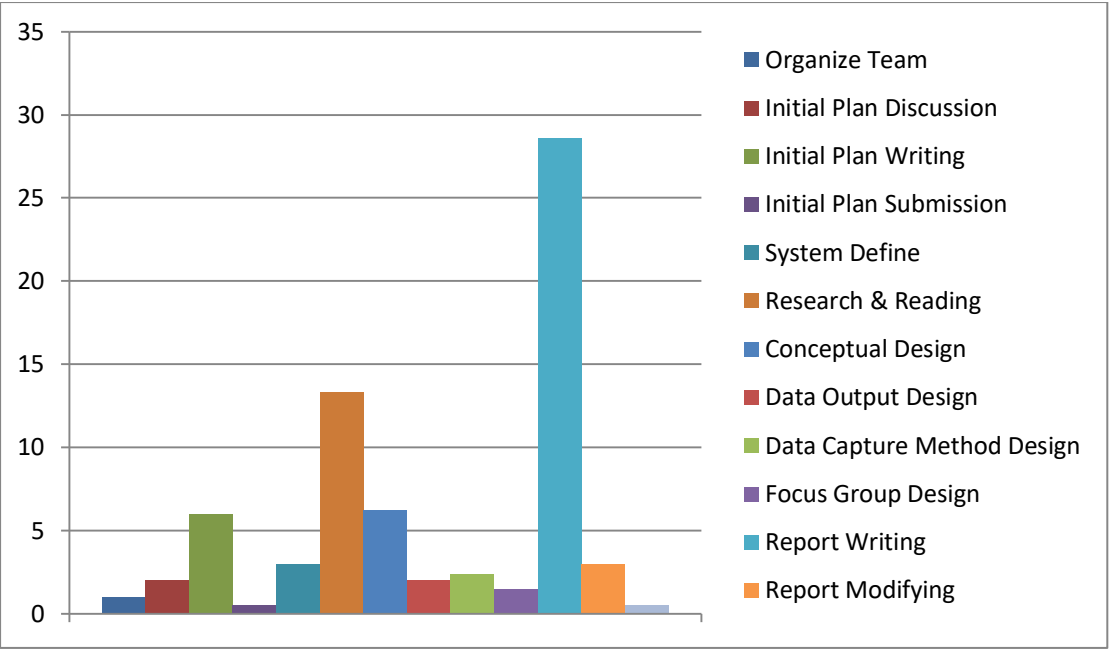
<b>Name:</b>	<b>Student ID Number</b>
<b>Activity</b>	<b>Time of Duration (hour)</b>
<b>Organize Team</b>	1
<b>Initial Plan Discussion</b>	2
<b>Initial Plan Writing</b>	1.5
<b>Initial Plan Submission</b>	0.5
<b>System Define</b>	3
<b>Research &amp; Reading</b>	2
<b>Conceptual Design</b>	2
<b>Data Output Design</b>	2
<b>Data Capture Method Design</b>	2.4
<b>Focus Group Design</b>	1.5
<b>Report Writing</b>	6
<b>Report Modifying</b>	3
<b>Report Submission</b>	0.5



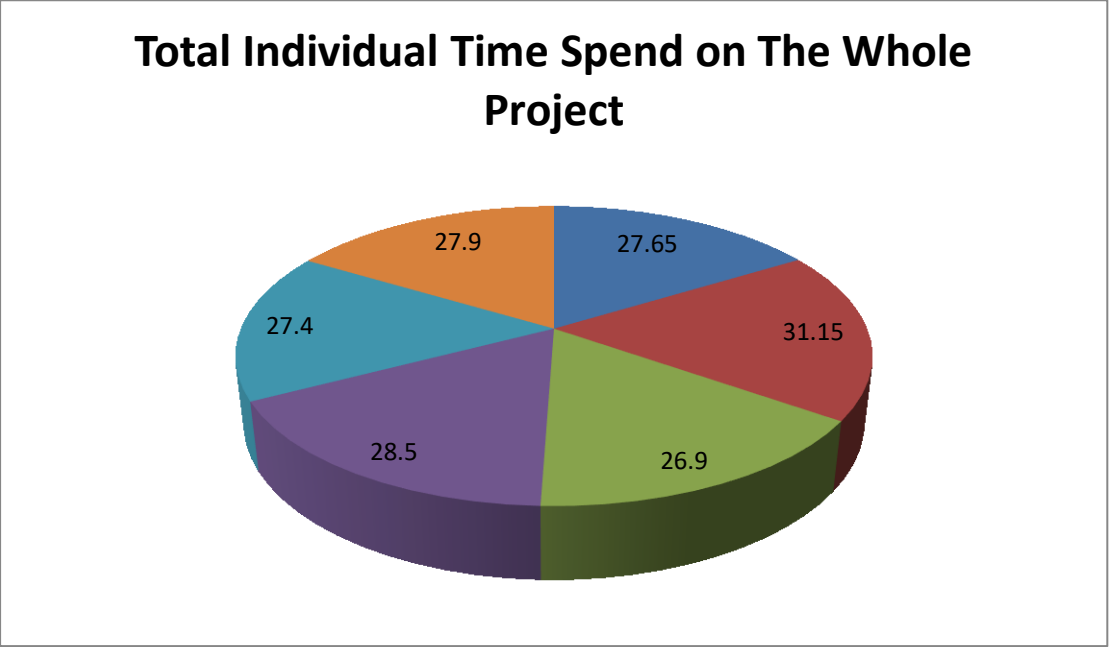
Name:	Student ID Number:
Activity	Time of Duration (hour)
Organize Team	1
Initial Plan Discussion	2
Initial Plan Writing	1
Initial Plan Submission	0.5
System Define	3
Research & Reading	1.5
Conceptual Design	2.5
Data Output Design	2
Data Capture Method Design	2.4
Focus Group Design	1.5
Report Writing	7
Report Modifying	3
Report Submission	0.5



Activity	Total Time of Duration (hour)
Organize Team	1
Initial Plan Discussion	2
Initial Plan Writing	5.97
Initial Plan Submission	0.5
System Define	3
Research & Reading	13.33
Conceptual Design	6.2
Data Output Design	2
Data Capture Method Design	2.4
Focus Group Design	1.5
Report Writing	28.6
Report Modifying	3
Report Submission	0.5
Total	70



Time	27.65	31.15	26.9	28.5	27.4	27.9
Spend (hour)						

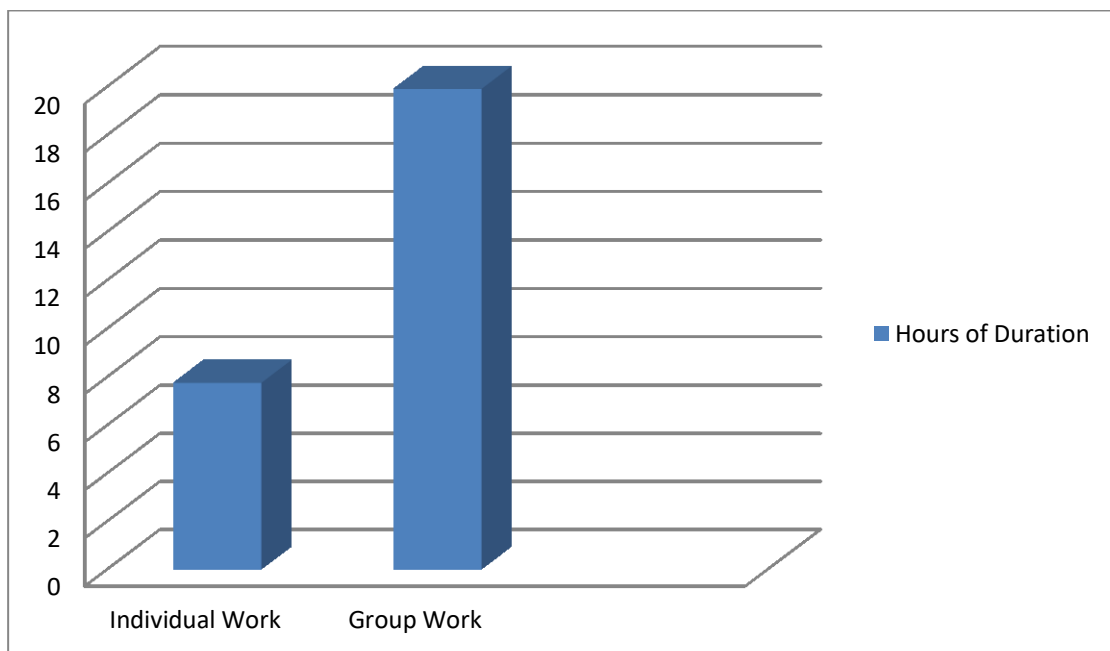


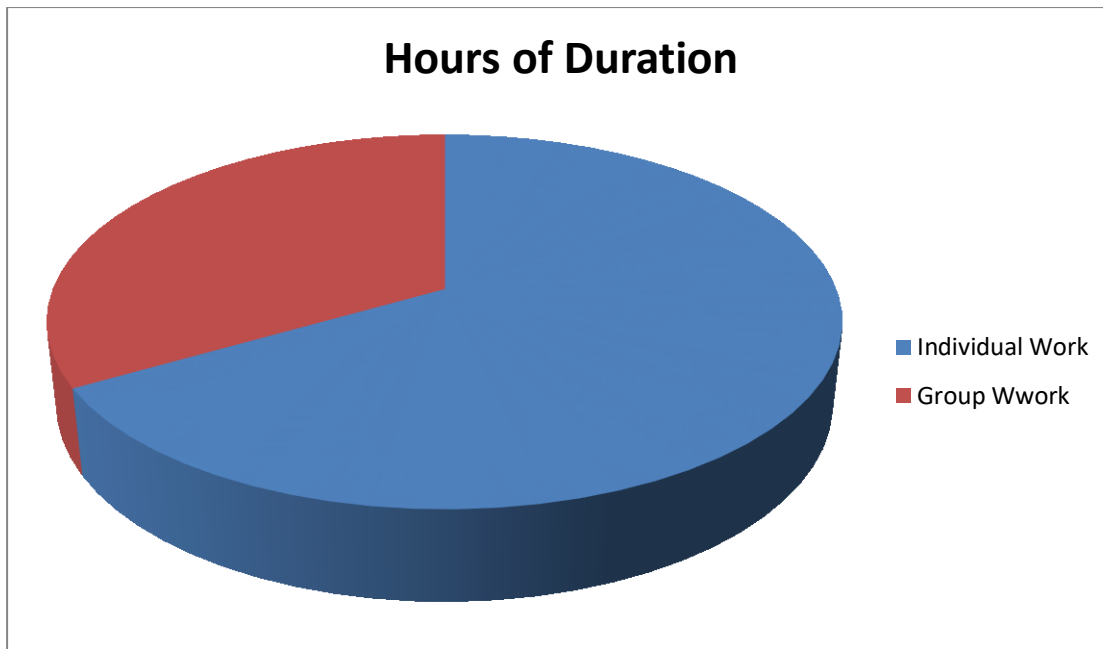
### Output3



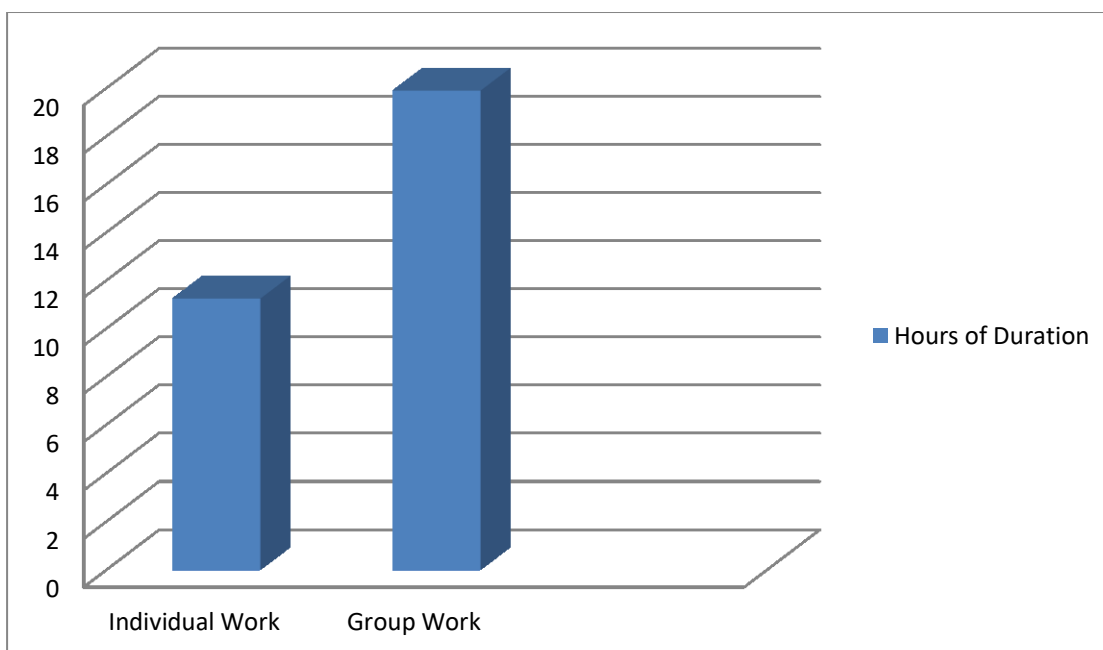
The third output represents that how students allocate their time between individual activities and group tasks. To be specific, individual work such as research and reading refers to time spending after group discussion. Group work refers to time spending during the group meeting and group discussion. This time spending data could be used to manage time more effectively and efficiently.

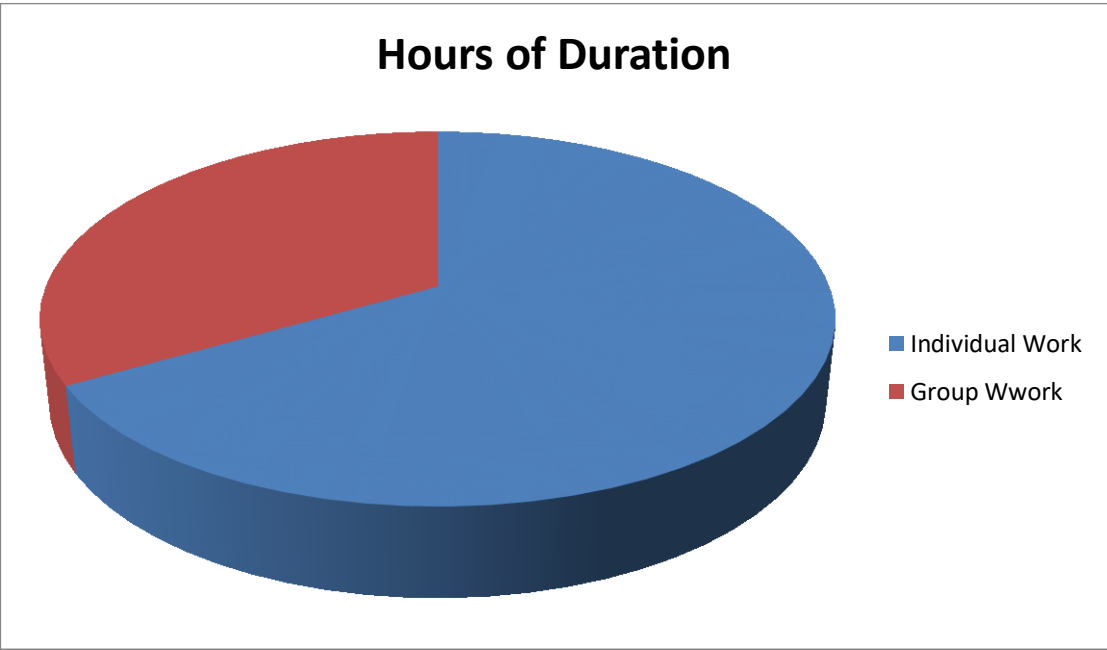
Student ID		UG Program	FAM
Given Name		AIS Class	
Family Name		AIS Group	
Gender	Male		
Activity Description		Time of Duration (hour)	
Individual Work		7.75	
Group Work		19.9	



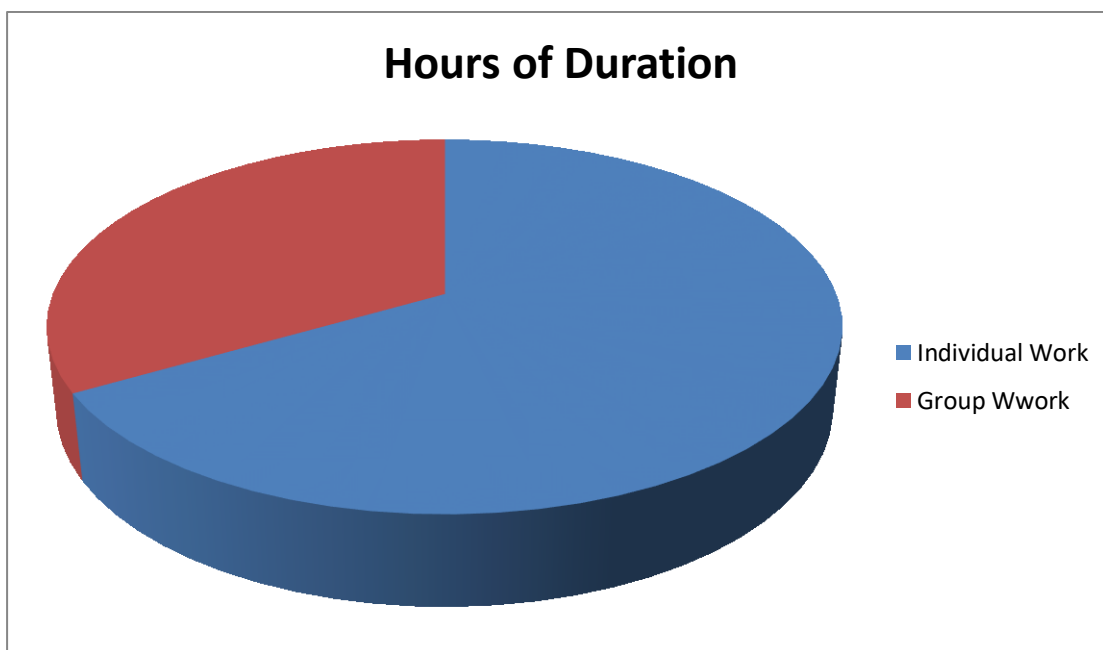
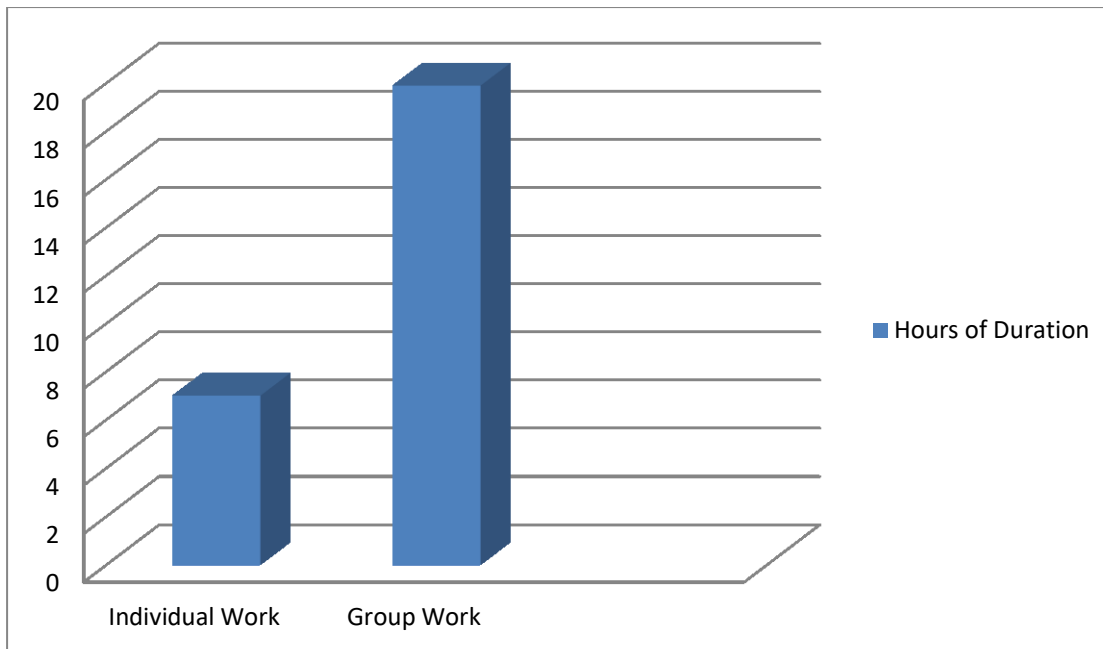


Student ID		UG Program	FAM
Given Name		AIS Class	
Family Name		AIS Group	
Gender	Female		
Activity Description		Time of Duration (hour)	
Individual Work		11.25	
Group Work		19.9	

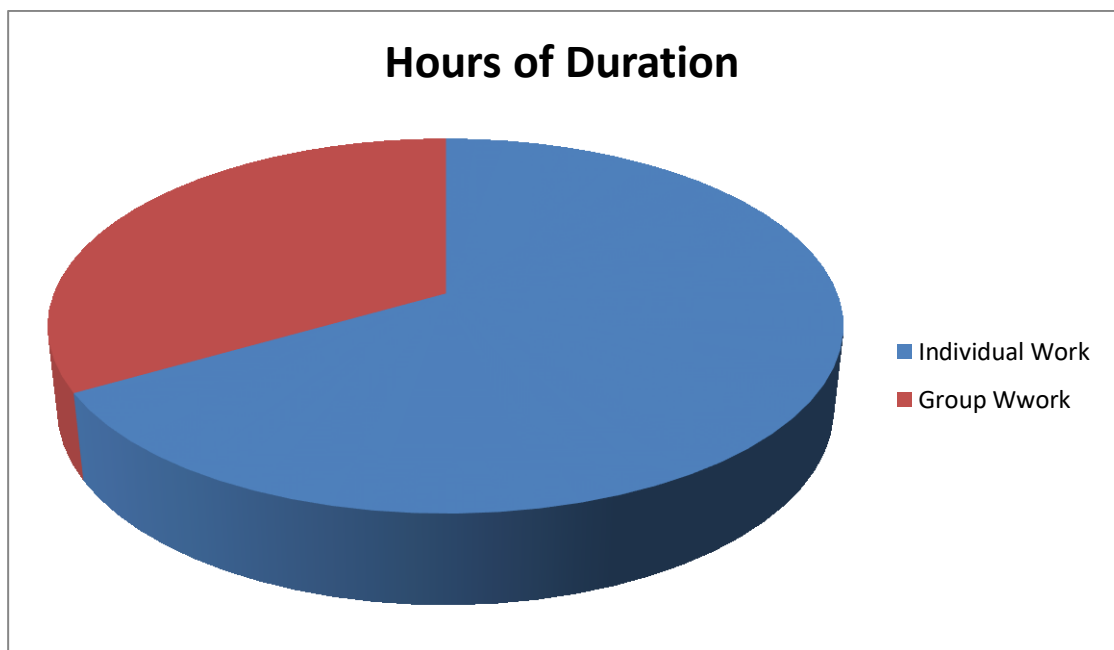
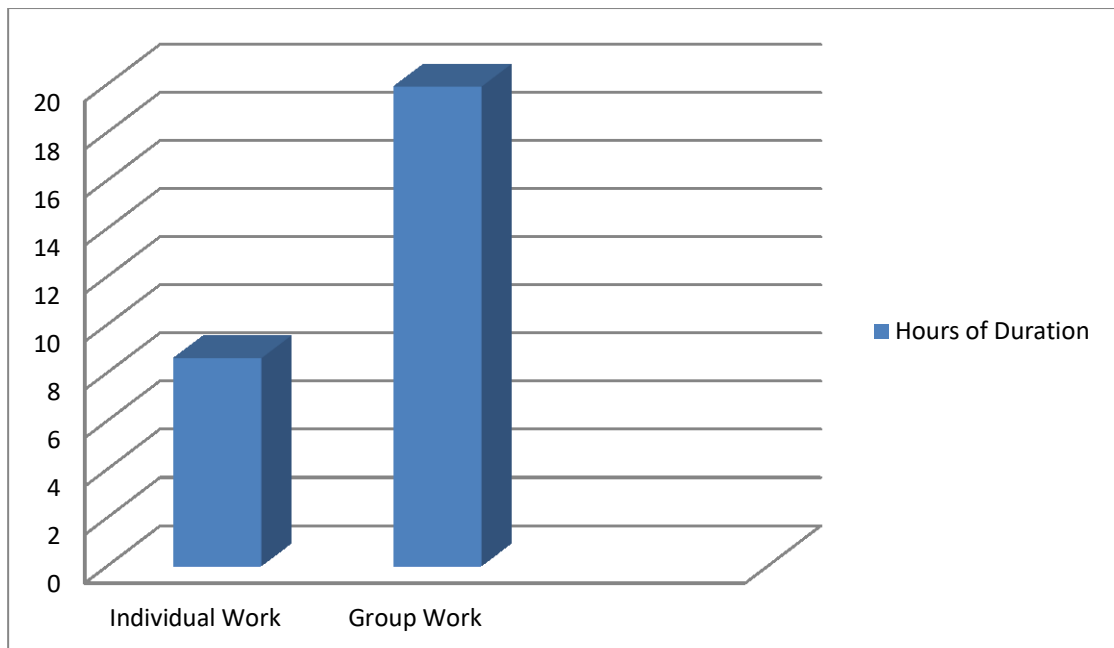




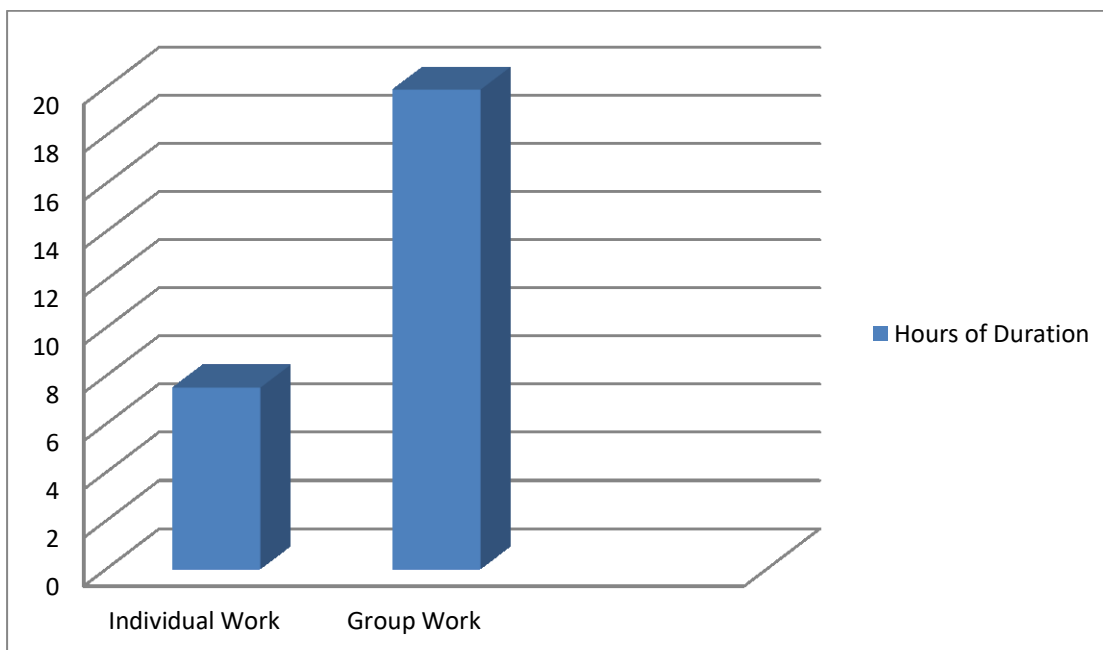
Student ID	UG Program	FAM
Given Name	AIS Class	
Family Name	AIS Group	
Gender	Female	
Activity Description	Time of Duration (hour)	
Individual Work	7	
Group Work	19.9	

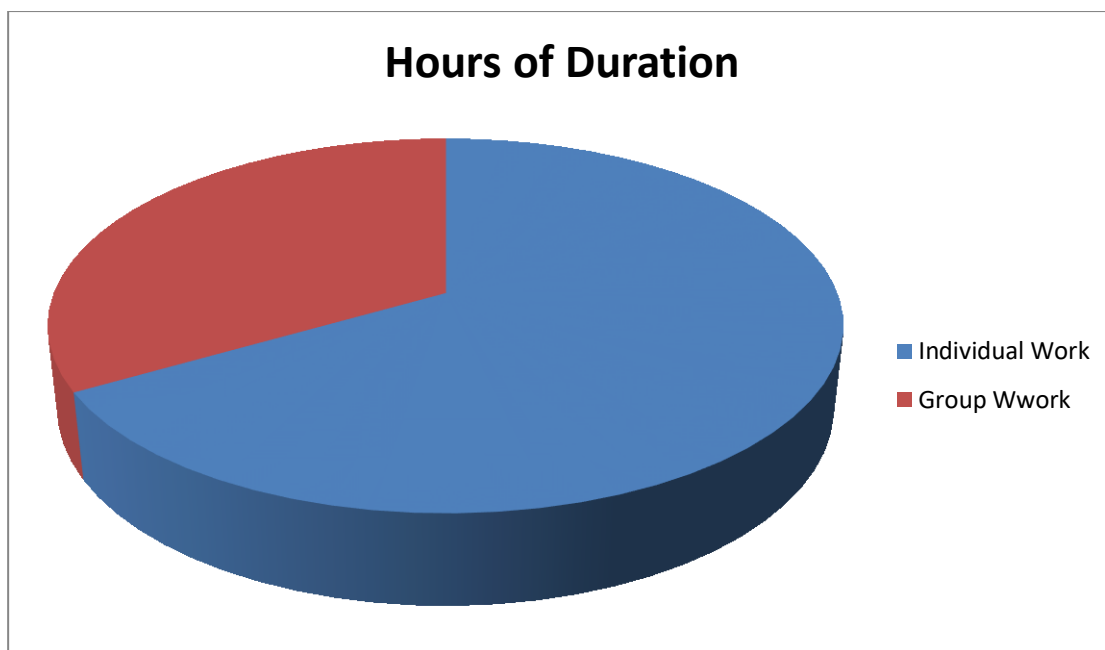


Student ID		UG Program	FAM
Given Name		AIS Class	
Family Name		AIS Group	
Gender	Female		
Activity Description		Time of Duration (hour)	
Individual Work		8.6	

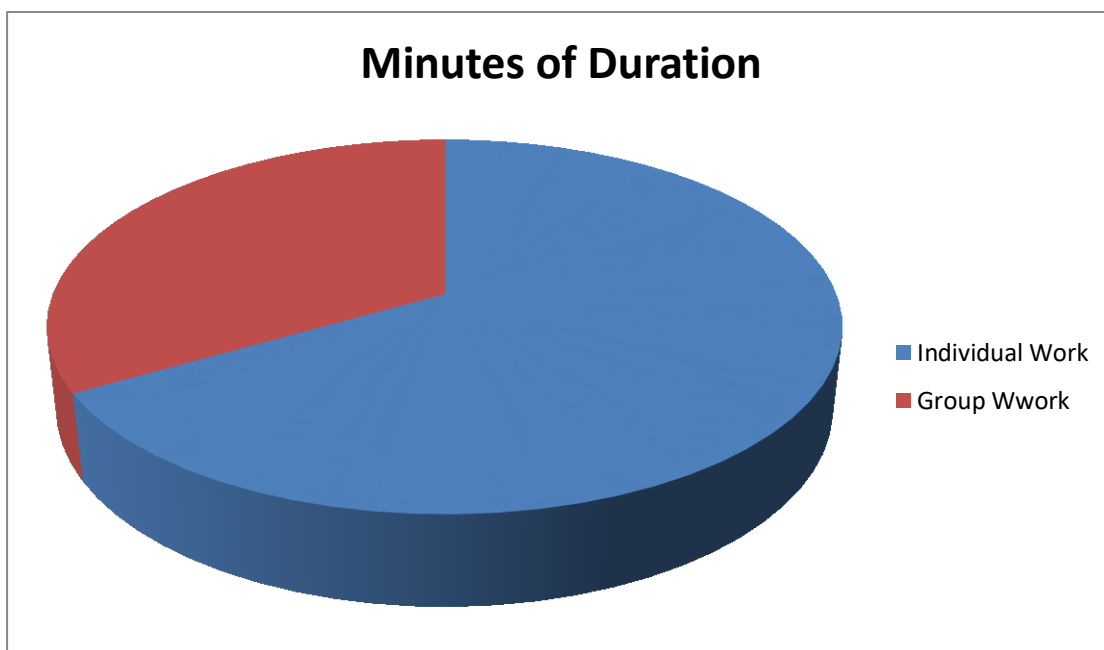
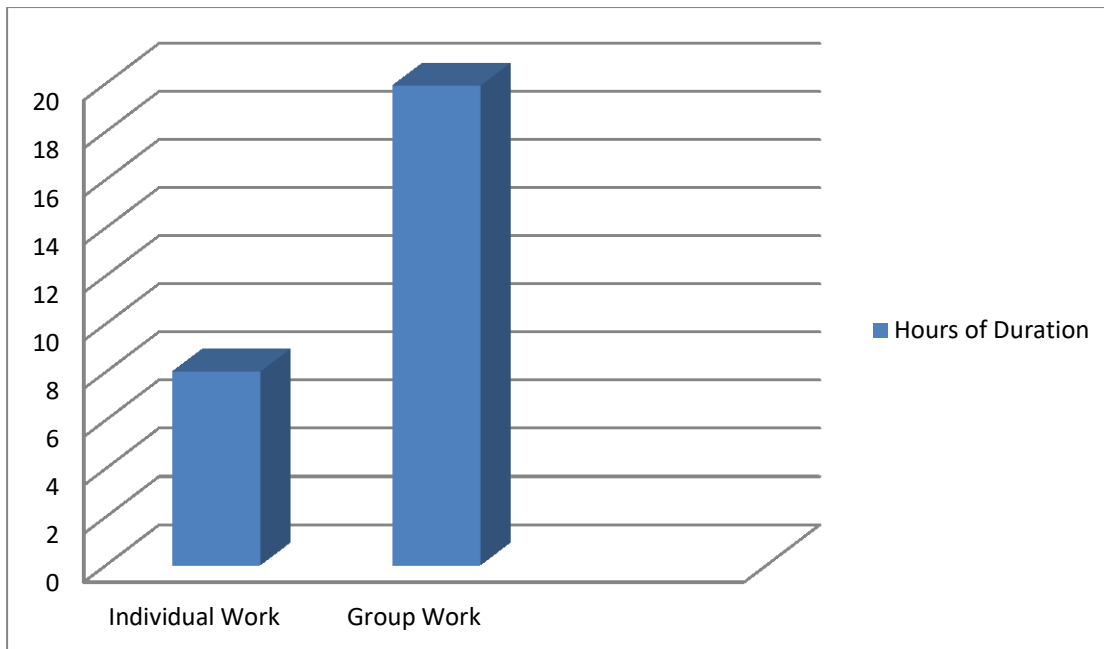


Student ID	UG Program	FAM
Given Name	AIS Class	
Family Name	AIS Group	
Gender	Female	
<b>Activity Description</b>	<b>Time of Duration (hour)</b>	
Individual Work	7.5	
Group Work	19.9	





Student ID		UG Program	FAM
Given Name		AIS Class	
Family Name		AIS Group	
Gender	Female		
Activity Description		Time of Duration (hour)	
Individual Work		8	
Group Work		19.9	



Overall:

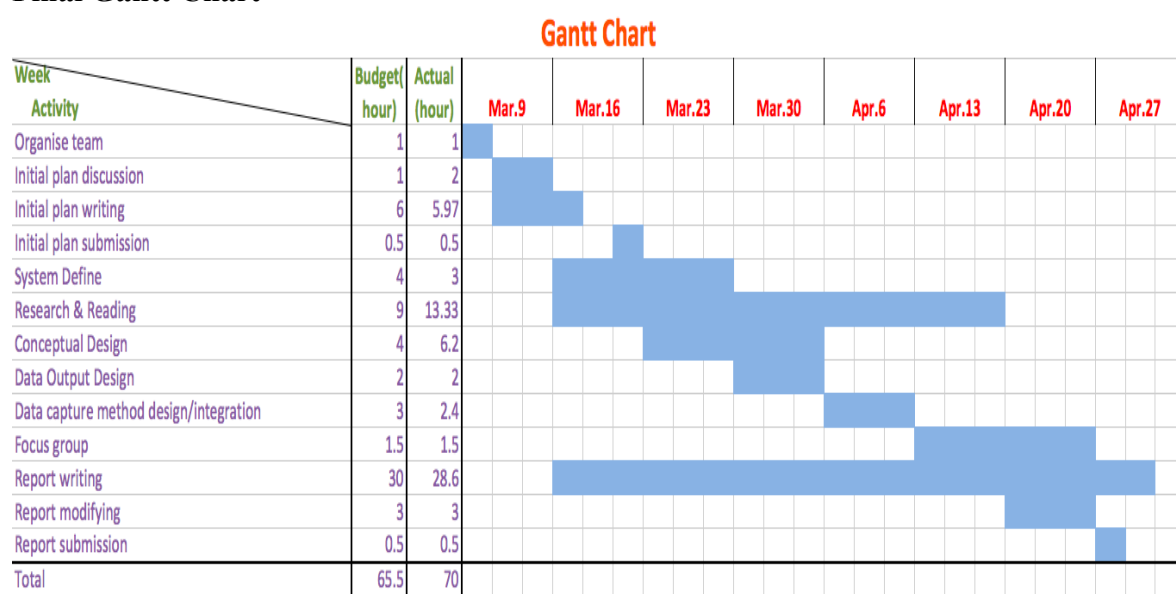


Time of Duration On Individual Work In AIS Project (hour)	
Student ID	Time of Duration (hour)
	7.75
	11.25
	7
	8.6
	7.5
	8
<b>Total</b>	50.1

Total Time of Duration In AIS Project (hour)	
	Time of Duration (hour)
<b>Individual</b>	50.1
<b>Group</b>	19.9
<b>Total</b>	70

## Appendix B Gantt chart

### Final Gantt Chart



## **Appendix C Documentation**

### **Level 0 data flow diagram**

To record the time students spent on the AIS project, the data flow diagram is accepted as a useful technique at the beginning of the system design. It illustrates the rough initial design of the whole data flow system. The data flow diagram usually based on the practice experience of the group members. It is easily to divide the data flow diagram in to several significant steps so that group members are able to start the project follow the data movement in the data flow diagram. However, the information and data, which are collected during the further research and focus group, will improve the data flow diagram. Then group members are able to create system flowcharts that contain more details to display the data flow in the system.

The level 0 data flow diagram is described as the top-level data flow diagram that show the main data flow process of the AIS project. It is accepted as the overview of the whole accounting information system. The movements of data started from data source to the destinations are the complete process of the data flow diagram. During the movement process, data will be stored, updated and analysis. Every step that specialized in different ways of processing the data consists the whole data flow system.

The whole process of the data flow diagram can be divided into different steps that are used to deal with the time data in different ways. The first step of the data flow diagram is the data collection, which is also described as the data source of the data flow diagram. According to the figure below, there are three useful tools to collect the time data. The timeorg app, the iHour app and Mrtime app, which are widely used among smart phones, are convenient for group members to record the time they spent on the program during their daily life and organize the data easily. That's the reason why we choose these three apps. Then the data are organized in the Microsoft Excel on the computer, which is convenient to store and directly import into access database. After data organizing, students will update the database before importing the data into the access database. With the updating data in the access database, students are able to make chart outputs. The final step is to make the general reports. The individual reports are only available for individual students while the general reports, which contain the group time spent on

AIS project, are sent to tutors. In addition, every steps of the level 0 data flow diagram can be described as a complete and individual data process. The data flow diagram could be divided into altered levels of data flow diagram, which contain more details to show a more detailed data movement process of the system at different level. (Romney and Steinbart, 2012)

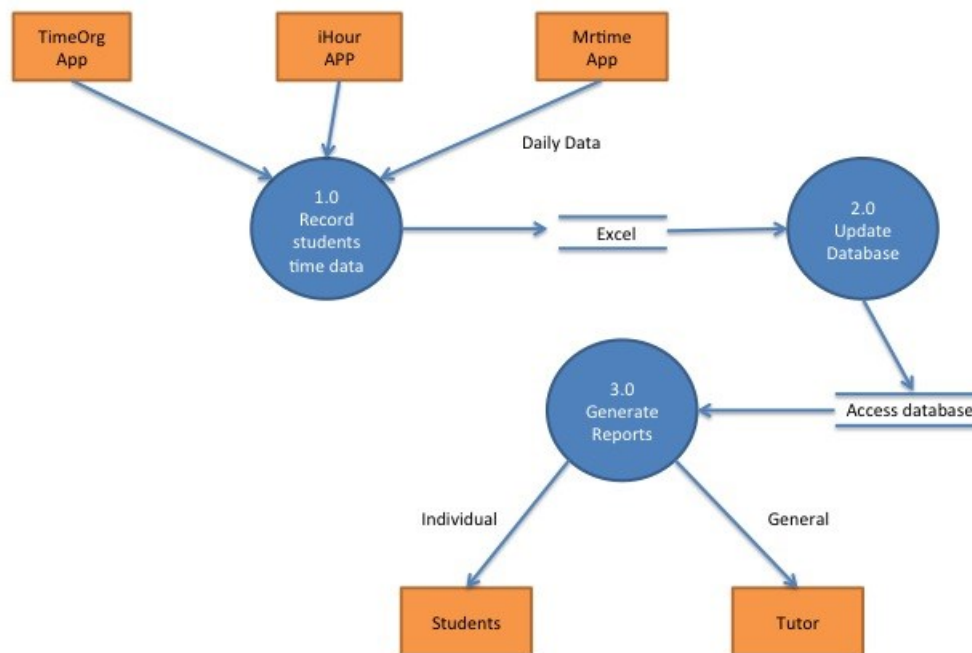


Figure C.1 Level 0 data flow diagram of the system

## System flowchart

The design of the system based on the analysis process of the time data. The following three sub-systems, which are data collection system, data import system and database analyzing or reporting system consist the whole system flowchart.

## Data collection system

This system aims to gather students' time spent on the AIS projects. The following three tools are important approaches to collect the time data.

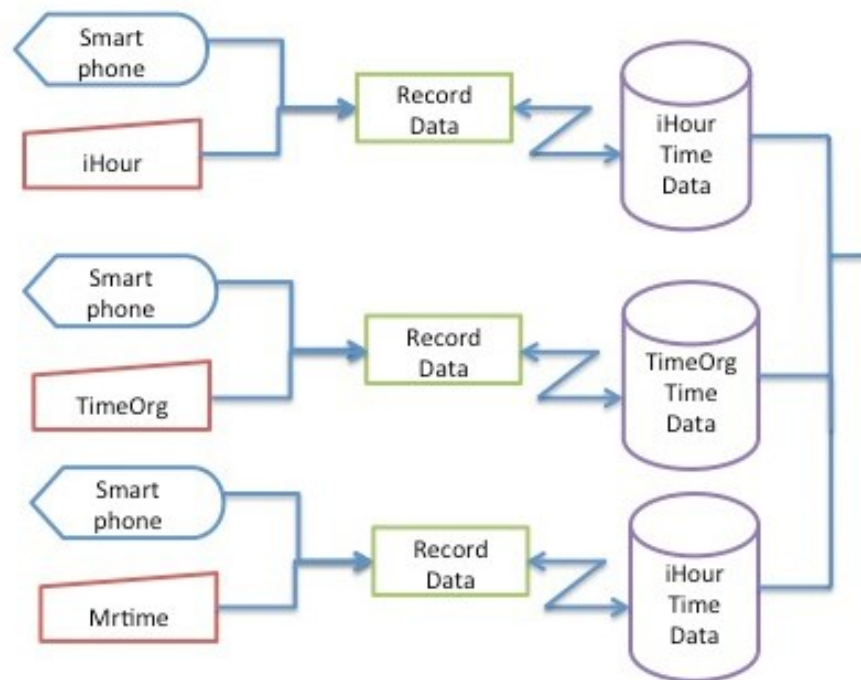


Figure C.2 Data collection system

### Data import system

The MS Excel is a convenient tool for group members to organize the time data after collection. Group members are easily to exchange and communicate their data by using the MS Excel. The other factor is that data in Excel is able to be import into database directly. In addition students will update and summarize the weekly time data and

import them into the access database for the future analysis.

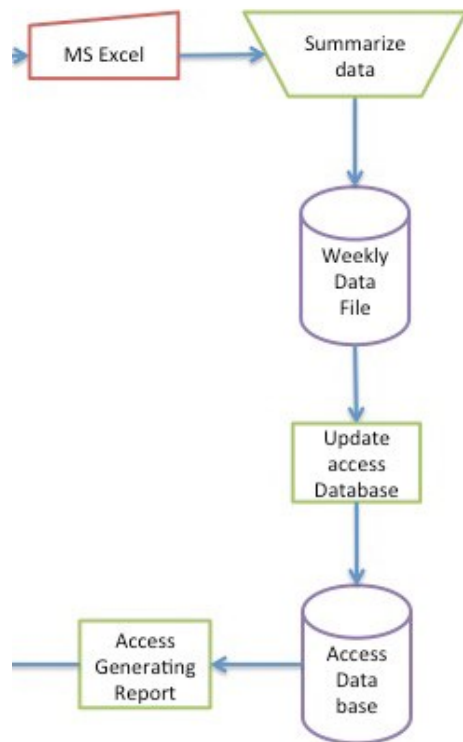


Figure C.3 Data import system

### Database analyzing or reporting

The processing step is based on the time data summarized from the data import system before. The weekly data updated every week based on the data collected by smart phone apps. Moreover, the final report for the whole semester and the data of time students

spent on the project will be organized and sent to the tutors.

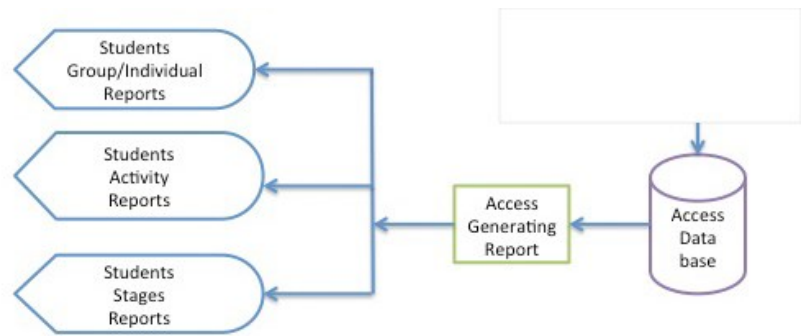


Figure B.4 Database processing system

### The ultimate system

The whole system flowcharts are consisted of following three sub-system flowcharts.

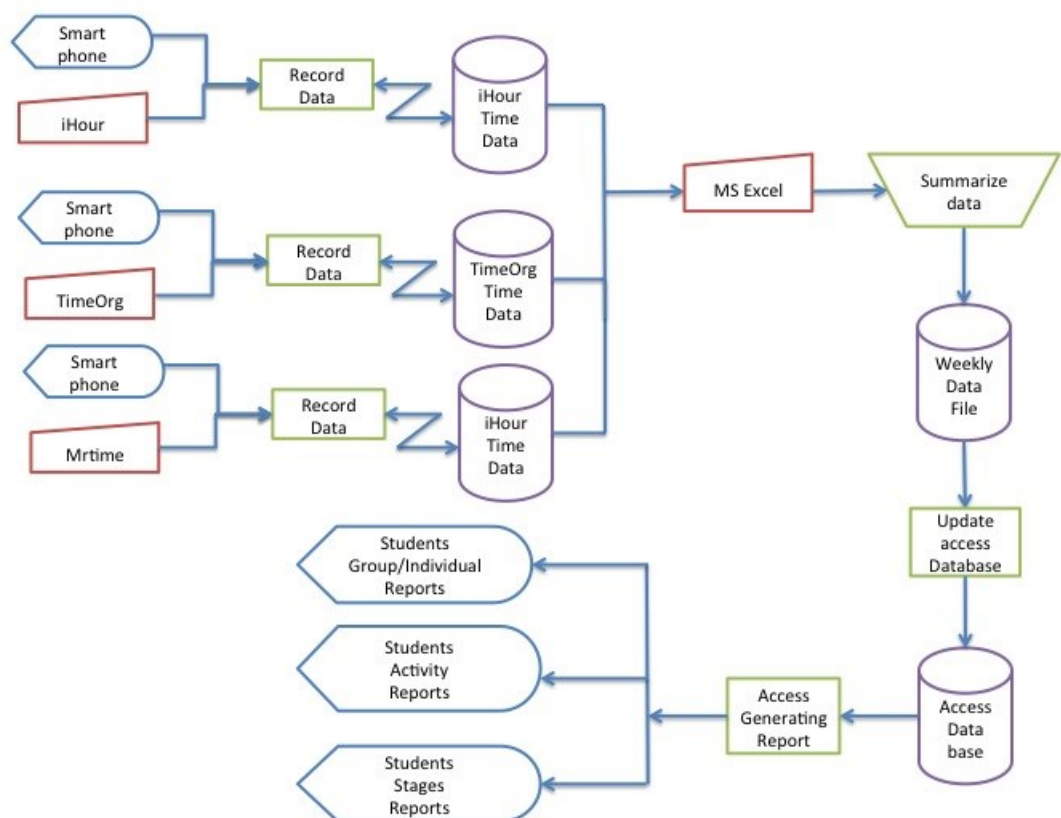


Figure C.5 System flowchart

## Appendix D: Data

Date	2015/04/24
Time	16:00-18:00
Venue	SSB 213
Participant	
Facilitator	
Observer	
Process	Firstly we gave a brief introduction of our group and the system we built to record group project time. Subsequently, we organized group interviews and discussions. Participators answered four open questions and observers listened to their responses as well as looked at their non-verbal interactions. Meanwhile, observers took notes based on their observations.
Question	<ol style="list-style-type: none"> <li>1. Do you think the system AIS students proposed can provide useful information to next year student to do their group projects?</li> <li>2. Do you get used to record time for your group project? If you have, in which way do you record your data?</li> <li>3. Do you face any problems when you record your data, which may result from limitation of your approach?</li> <li>4. Does the process of your group project perform as expected?</li> </ol>
Summarized Notes:	<p>Do you think the system can provide useful information to next year student?</p> <ol style="list-style-type: none"> <li>1. For me I think it will be useful. After next year students got the information from our system, they can change the strategies and plan on our group project. For example, they will know how to collect data efficiently and thus realize the importance of time management.</li> <li>2. Generally, I don't think so as I think how much output produced is more important than how much time spent.</li> <li>3. Yes, it can provide useful information as they can know the exact time they used on group project and then can make adjustment for the remaining tasks.</li> <li>4. If they only focus on how long they spent on project, it may reduce their group efficiency. But the information is still useful.</li> <li>5. No I think system we developed for academic coursework is a little bit complex so that understanding the system costs time. However, when students move on to third year of UNNC, most of them know how to conduct a group project roughly. Therefore the system might not be useful</li> <li>6. Not useful because it might limit certain formats to do group project and environment can be different. So drawbacks outweigh the benefit.</li> </ol> <p>Do you get used to record time spent on your group project? If you have, how you collect the data of time?</p> <ol style="list-style-type: none"> <li>1. Yes. I use my watch. I make my schedule in advance and it can remind me what I should do at a particular time.</li> </ol>



	<ol style="list-style-type: none"> <li>2. Yes, when I learn at the start the new app called iHour in IOS system, it is not easy. But when I try more times I get used to record my time. The app can generate bar chart and line chart and transport to my laptop. I think it is very scientific and convenient.</li> <li>3. No. Don't get used to it and I think I will not continue to record my daily work when finishes this project.</li> <li>4. Yes. I always set up a plan before discussion using pen and paper. Although sometimes not followed, it is better than nothing. It's all in the minutes of the group.</li> <li>5. No. I don't record time. I think it brings us a lot of trouble when we have to integrate weekly the time each member spent on the project.</li> <li>6. Yes, I develop a habit to record time because I can know my productivity by comparing the plan and the time I spent in reality.</li> </ol> <p>Do you get used to record time spent on your group project? If you have, how you collect the data of time?</p> <ol style="list-style-type: none"> <li>1. It brings a little inconvenient, because during discussion or self-work I need to check time from time to time, which disturbs my work and leads to inefficient for my work.</li> <li>2. I use app on cellphone. Sometimes it runs out of power and I rely on my memory of time. So it might not so accurate.</li> <li>3. I cannot keep recording every time doing group project. It may be interesting at the start however when time goes by I feel bored. Finally, I become lazy to record time</li> <li>4. Human error can occur when the data is inputted to Access or Excel. For instance, I once delete data by mistake and this data is missed.</li> <li>5. Sometimes it is difficult to assign the work I have done to the specific activity because it may belong to several activities. For example, the reading I do can for the project can contribute to initial planning and report writing at the same time</li> <li>6. I use app to record time. But it can distract my attention.</li> </ol> <p>Does the process of your group project performs as expected?</p> <ol style="list-style-type: none"> <li>1. Yes I think the process followed our plan generally. We catch up in most stages.</li> <li>2. Yes, although some conflicts occur during group discussions which make group time longer than we anticipated, our team members are productive to meet the deadline.</li> <li>3. No, we spend much more time on DFD part, which delays the plan, and if we can do the project again, we will adjust our plan.</li> <li>4. No, we assign too less time on reading and actually, we spend nearly double time on that.</li> <li>5. No, we have two group projects in this semester, I think most people allocate more time in fact on DDI group project but</li> </ol>
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	<p>care less about AIS. Actually our group spent less time than planned on AIS group project.</p> <p>6. I have no idea.</p>
Observation	<p>Observers have responsibility are not only to understand the participants' responds but also their non-verbal communications and body languages. From our observation, all of the six students were very active and participative. For example, when the facilitator showed the question on the computer screen they all raised their head to look at it and expressed opinions and ideas freely during the group interview and group discussion. Furthermore, they nod to show that they agreed with the opinion. During the discussion, there were some non-verbal communication between students and the facilitator such as eye contact and body languages.</p>
Reflection	<p>We identify several disadvantages and limitations after conducting the focus group. Also we think that some of issues may not be resolved. The severe one is that students can't persist in recording the data for lack of motivation or incentives. However, in university context, we cannot provide financial incentives to them. Secondly, most participants have forgetfulness problems and decrease the precision of the data.</p>

## Appendix E. Reference

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## Appendix K Module Learning Objectives

### Module Aims

The aim of the module is to provide students with an appreciation of the current issues in information technology, together with a theoretical and practical understanding of the process of developing, implementing and maintaining information systems to support the activities of the accountant and management.

### Objectives

#### Understanding and knowledge:

1. To understand the purpose and role of accounting information systems.
2. To understand the flow of accounting data and information in business organisations in general and in accounting systems in particular.
3. To appreciate the use of technology in accounting information systems.
4. To comprehend how information systems are developed, implemented and maintained.
5. To appreciate the risks inherent in an AIS, and how to manage and control them.

#### Skills:

6. To be able to use a variety of systems development tools and techniques.
7. To develop skills in modelling and database development in MS Access 2013

### Approach

This module will use the traditional Lecture model of teaching for part of the delivery of the course. There will be 10 60 to 90 minute lectures, each followed by a discussion period, one revision lecture, 3 small group task-based seminars and 1 laboratory seminar. Each interaction will last for up to 2 hours.

Students will be expected to attend both the lecture series and seminars, preferably sitting with their designated groups and to have undertaken any self-learning activities and preparation **before** doing so. **Some of this work is assessed** and is also necessary if you are to be able to cope with seminars and the examination.

The seminars will develop material covered in the lectures. New material may be introduced which may later be examined. The seminar material will be advised in advance and students will be expected to have read the material and/or attempted the example or study before the class meeting. The seminars will be interactive and students will be expected to contribute (usefully) to the discussion.

### Attendance

Students should attend all lectures and all seminars.

### Responsibility for student learning

All 10 credit modules are expected to comprise a **minimum** of 100 hours of work. However, many people will need to do more than this in order to absorb the material fully. Remember that you will need to spend time on all of the following: attending lectures and seminars, preparing, reading, researching, reflecting, completing practice questions and, of course, revision.

It is not the responsibility of the tutor or lecturer to ensure that you undertake the learning for this module. This learning approach may differ to those approaches typically used in schools and moving towards University-style learning sometimes causes problems.



## Appendix L Marking Criteria

Extract from the Undergraduate Student Handbook

**Ist 80+ Outstanding piece of work:**

All major and minor objectives achieved.  
Thorough comprehension and informed criticism.  
Evidence of work beyond question and some originality.  
Free from errors and showing analytical skills.

**Ist 70-79 Good piece of work:**

All major and some minor objectives achieved.  
Thorough comprehension of the issues involved.  
Familiarity with the source material.  
No major errors and only occasional minor errors.

**II-1 60-69 Careful and clear piece of work:**

Most major objectives achieved.  
Understanding of salient issues.  
Adequate grasp of the general area.  
No major errors though some minor errors.

**II-2 50-59 Middle of the range piece of work:**

Basic question covered.  
Treats and understands most relevant issues.  
Material a bit thin and/or poorly focused.  
Possible major and some minor errors.

**III 40-49 Adequate if poor piece of work:**

Few major objectives achieved.  
Demonstrates understanding of general field.  
Inadequate reading/preparation.  
Occasional major and some minor errors.

**Fail 30-39 A failed but still relevant piece of work:**

A very weak or tangential answer to the question set.  
Shows some understanding of the general field.  
Very poor reading/preparation or demonstrated skill level.  
Major errors with major objectives not achieved.

**Fail 19-29 A badly failed and largely irrelevant piece of work:**

An extremely weak answer to the question set.  
Shows only a poor understanding of the general field.  
No evidence of reading/preparation or required skill level.  
Many major errors and very little relevant material.

**Fail 0-19 A very badly failed, irrelevant &/or incomplete piece of work:**

No evidence of being an answer to the question set, or so insubstantial that it cannot be marked as such.  
Lacking even tangentially relevant material.  
Totally unsound and demonstrating no required skills base.





## Appendix M Context setting

### Introduction

When taking an evidence-based approach, one of the four sources of evidence that needs to be considered relates to Context, organisational actors and circumstances (Briner et al., 2009:22). Studies in different countries and cultures are particularly helpful in testing the boundary conditions of knowledge claims from earlier studies because contextual differences such as culture, institutions, and levels of economic development mean that knowledge claims based on data collected in one country do not automatically hold in another (Seddon and Scheepers, 2011). As maintained throughout this work, recognising and explaining the context of this study is therefore important.

Since context was also one of the themes identified in this research (Figure 32 Stakeholder perception of UNNC context), the main levels of context identified, University and Country, are discussed here while other contextual influences are discussed in the analysis chapter. In the following sections, these two broad contextual influences, their history and their interplay, are examined.

### University of Nottingham, Ningbo China

The University of Nottingham's China campus first opened its doors to students in 2004, shortly after the arrival of the researcher, and with each intake has grown in size in terms of students, faculty, academic divisions and research impact. The campus, faculty, students and their various achievements, have all received accolades from governments, academic bodies and the media (U.N.N.C., 2016). The student population has grown from under 250 to over 5,000 in that time and is expected to grow further as the number of schools and programmes delivered increases.



This, the third campus of the University of Nottingham, is run as a joint venture with Zhejiang Wanli Education Group, a key player in the education sector in China, and offers British degree programmes with the same quality assurance process applied in the Chinese, UK and Malaysian campuses of the University (U.N.N.C., 2016).

The faculty come from over 40 different countries and the student body, while predominantly Chinese, includes people from around the world. General entry requirements are set high, in line with the demand for entry to the University and, since all content is delivered in English, the minimum required English level, for undergraduate qualifying year study, is set at IELTS 6.5 (U.N.N.C., 2016).

## Zhejiang, China

The campus is located in the University zone, on the south east outskirts of Ningbo city, near the eastern seaboard of Zhejiang province. While Hangzhou is the capital city of Zhejiang, Ningbo is the financial capital and the University is within a few blocks of the new financial centre of Ningbo.

Figure 47 Zhejiang Province – (Atimes, 2016) shows the location of Zhejiang province, relative to the rest of the nation. To give an idea of scale, Ningbo is about 4 hours' drive from Shanghai, crossing the Hangzhou bay bridge.



Figure 47 Zhejiang Province – (Atimes, 2016)

Educational standards employed at the University must meet both the requirements of the University, those of the local and national Education Bureaux and those of the international accreditations of the Business school. Programmes offered must therefore be meet the requirements of each. The programmes, in which the module used in this research is a part, have also been accredited by professional accounting bodies. These requirements all have an impact on the flexibility with which the teaching and learning interactions used in this research may be designed.



## Appendix N Further reflections

A broad range of explanations for a perceived reticence to contribute to discussion, from a low valuation of their own view to self-evaluation of second-language proficiency, include a strong preference for 'passive learning' – "I am here to be taught, not to teach". Some students that remain silent would therefore seem to be consciously and, from the perspective of their peers, 'selfishly' competitive by not sharing their own views.

Could it be that Western pedagogies reliant on small group interactions are not suited to Mainland Chinese learners? While the literature recognises that international incomers to Western university contexts suffer through being placed in a game where only local learners understand the rules and that, until they overcome this learning to learn obstacle, their grades suffer (Haigh (2014:9) and Schleicher (2006:508)), in this context, the student may hold a higher expectation for the rules of the game to change to meet their preference – this is, after all, a game being played on their home turf.

Could this mean that tutors in such contexts have not sufficiently adjusted their pedagogy to meet the needs of the student? From this research it is clear that the preference of some students has not been met. Who is in a position to judge their educational need? The student, parent, tutor, university, government or future employer? The reflective tutor may still perceive a need to adjust their teaching practice, to try to catch those learners that seem, every year, to evade the cast of his teaching net. What about those students that learn better from this interactive student-centred style of education that, as a result of developing their interpersonal communication and group working skills, appeal more to potential employers, particularly those in accounting fields?

'Sink or swim' (Li and Campbell, 2008)? Where should students learn to swim? In a training pool under the watchful eye of a trainer, or in the 'shark'-infested waters of practice? Avoiding that which we find challenging may be a mistake -

protecting students from such group experiences would seem to render them at a disadvantage to those with.

Recommendations for a compromise position, where students and tutors meet in the middle and adopt a 'harmonious culture' provide no specifics in how to achieve such a win-win position, but it seems clear that by compromising, the learning outcomes of all students, not just those with difficulty adapting to the process, are compromised. So can we have our cake and eat it? Can we teach all of the students in their 'right way' all of the time? By using a more diverse teaching strategy, perhaps we can achieve this aim for all students some of the time.

Perhaps a better way to ensure that the culture of the classroom meets the cultural preference of the student is for the student to be selective in which classroom or university they choose. Such an approach might require decision making at the university level, to offer a particular teaching style. Is the compromise alternative a road to a standardised global university experience?

How we teach, not what is taught? Since students learn from classroom and campus culture beyond the specific module content, the focus of this argument is on the how - not the what, but the two seem to an extent inextricably linked, particularly in respect of communication and interpersonal skills.

In this respect, in this research, the evidence would seem to support the suggestion that students that are unable, or unwilling, to adapt to the classroom culture of their university's approach to education, should choose a university with a different classroom culture. While this may seem at odds with proponents of the internationalisation of education, this is merely a reflection of the criteria used in selection of a learning environment. Differences in these environments and their effects on learning outcomes are recognised as a competitive edge, both in the recruiting of new students by universities and in the recruiting of emerging graduates by employers.