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Engaging students in group work to maximise knowledge sharing

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Abstract

We investigated how students' interpersonal trust relationships impact on their willingness to share knowledge during group work and whether there is one best method of group allocation to maximise knowledge sharing. Through focus groups with 32 undergraduate and postgraduate students, we found: i) participants had limited experience of sharing skills; ii) they were more frequently engaged in sharing their beliefs, values and ideas, a positive aspect of group work; iii) interpersonal relationships impacted upon the degree to which knowledge sharing took place, the major contributing factor being participants' motivations and desired outcomes for their work rather than interpersonal relationships.

The majority agreed that being placed in a random or engineered group allowed them to meet new people, but also contained an element of chance, reducing control of their performance in assessments. Those focussed on attainment or concerned about working with those they did not know preferred self-selection. Participants who wanted to learn from the experience of group work preferred random allocation. An unexpected finding was the substantial emotional response to negative aspects of group work. The most equitable approach to group work is to allow students to choose the allocation method most appropriate to their needs. This enhances student ownership, and provides the best possible opportunity for students to work with like-minded colleagues to pursue their own aims and fulfil their individual needs from their group work experiences. Findings can assist educators make informed decisions about group work to increase student engagement and support cognitive-based trust to enhance knowledge sharing.

Key Words

Knowledge-sharing, cognitive-based trust, affect-based trust, group allocation

Introduction

This report presents findings from an HEA Wales Enhancement Fund project conducted May-July 2011, exploring how students engage in knowledge sharing within group work. Group learning has become an established part of academic programmes in many universities (Lejk et al., 1997; Li, 2001; Strauss and Alice, 2007) and has potential benefits for educators as well as students. Of principle importance, group learning has been argued to allow students to develop valuable skill sets experientially (Creswell, 1998; Bourner et al., 2001; Lejk and Wyvil, 2002) and provides an opportunity for “deep” learning (Freeman, 1995; Bourner et al., 2001), encouraging the retention of knowledge and a depth of understanding (Feldner and Brent, 1996). For educators, the use of group-based learning and assessment can be an efficient use of an educator’s time (Livingstone and Lynch, 2000).

While student perspectives on group-work can vary (Bourner et al., 2001; Hillyard et al., 2010), our views have remained fairly consistent - we are strongly in favour of group-learning through the use of group-work projects. We believe that group-work provides an important vehicle, in which students’ individual skill-sets and past experiences can be leveraged as a resource to improve the knowledge of all students within the group. We are not alone in this view; Livingstone and Lynch (2000) recommend group work as a mechanism for the transfer of student skills and Plastow et al. (2010) note that group work has been widely recommended in the pedagogy literature as a means for students to share and acquire knowledge. Our views are perhaps best echoed by Creswell (1998 p.67), who in discussing his experiences of students engaged in resource-based learning makes the statement:

“The most important resource is the student’s own team, which acts as a learning group. In their team, students can pass on their own previous experience or collaborate in solving course-related problems”

A common dilemma is on what basis to allocate students to groups. Huxham and Land (2001) identify three broad approaches: allowing students to choose their own groups; allocating students randomly; engineering groups according to their personal characteristics. The third method of allocation can be argued to be most appropriate (to achieve diverse skill sets) but only if students are willing to share their skills and experiences, and make use of those owned by others.

While we believe that the third method of allocation is most appropriate, a claim which is echoed in the literature (Jaques, 1984; Katzenbach and Smith, 1993 [Cited in Huxham and Land, 2001]), we recognize that this would only hold under the assumption that students would be willing to share their own skills and experiences, and make use of those owned by others. This may not occur immediately, especially amongst those not previously acquainted, as teams and groups often take time to arrive at effective ways of working, and the process often involves a great deal of conflict (Tuckman, 1965; Ito and Botheride, 2008).

The purpose of this short project was to gain an understanding of how students’ interpersonal trust relationships impact on their willingness to share knowledge during group work with a view to determining the most appropriate

method of group allocation and increase student engagement in this learning activity.

The main objectives of the research were to:

- Gain an understanding of students' experiences and perceptions of group work in Bangor Business School as a vehicle for sharing knowledge.
- Determine to what extent students believe their interpersonal trust relationships with their group-mates impacts upon their willingness to share knowledge during group-work.
- Understand students' preferences for group allocation to inform curriculum design and delivery

The achievement of these objectives provide an answer to our overall research question:

- 1) Is there one best method of allocating students to groups when the purpose is to maximise knowledge sharing?

Knowledge Sharing

The task of defining knowledge has preoccupied philosophers for over two millennia and the problem has taken on a practical significance in recent years, as knowledge has come to be viewed as a key resource (Nonaka and Takeuchi, 1995; Sewell, 2005). Many frameworks, typologies and categorisation schemes have been advanced for dealing with the concept of knowledge, yet the most common, and practical, is the distinction between "explicit" and "tacit" knowledge (Pathirage et al., 2007).

Explicit knowledge is often characterized as being easy to articulate and share in the form of documents and words (Nonaka and Konno, 1998; Herrgard, 2000; Stenmark, 2001; Hislop, 2009); examples include such things as numbers, data, scientific formulae and manuals (Nonaka and Konno, 1998). Conversely, tacit knowledge is often characterized as being personal and difficult to share or codify (Nonaka and Konno, 1998; Herrgard, 2000; Hislop, 2009) and its precise nature is a subject which has invited numerous, and often divergent opinions (McAdam et al., 2007).

A number of researchers have understood tacit knowledge as being comprised of two dimensions: technical and cognitive. The former can be described as "know-how" - which is the skills and practical expertise an individual has gained (Nonaka and Konno, 1998; Stenmark, 2001; McAdam et al, 2007), i.e. the ability to put "know-what" into practice (Brown and Duigid, 1998). The second dimension can be described as being constituted of the mental models, values, beliefs, subjective insights and ideals that an individual holds (Nonaka and Konno, 1998; McAdam et al., 2007).

Examples of technical tacit knowledge ("know-what") in the context of a student's business and management education may include such things as mastery of statistical computer packages, the ability to apply analytical models and the construction of financial statements. Examples of cognitive tacit knowledge may

include students' perceptions, values and subjective insights into the way in which managers, businesses and organisations in general do and should operate.

When we ask our students to engage in group work, it is with the hope that they will share and learn from both the practical skills and personal experiences that they each possess. Our experience is that this often does happen and positive experiences of such knowledge transfers are often reported in the pedagogical literature (Cresswell, 1998; Livingstone and Lynch, 2000; Plastow et al., 2010).

Despite clear benefits to knowledge sharing numerous barriers to exist; as Bollinger and Smith (2001) highlight, the majority of these involve people – and common barriers to knowledge sharing include apathetic attitudes to sharing knowledge (Wang 2006; Alwis and Hartmann 2008), power relationships, personal relationships, personal likes and dislikes (Cook and Cook 2004) and a lack of trust between colleagues (Cook and Cook 2004; Wang, 2006). There are also material barriers to knowledge sharing; as Alwis and Hartmaan (2008) note the physical layout of work space or the lack of communication technology may also negatively impact on the ability, and perhaps willingness, of individuals to share knowledge.

Interpersonal Trust and Knowledge Sharing

Trust, as a concept, has received multiple interpretations, and can be understood as being multi-faceted (McAllister, 1995; Holste and Fields, 2010). McAllister's (1995, p.25) substantial investigation into the topic of interpersonal trust, which he defines as "...the extent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another" solidified the work of previous researchers in defining two related, yet empirically and conceptually distinct types of trust: affect- and cognition-based trust. Affect-based trust is grounded in the mutual care and concern that exists between individuals, whilst cognition-based trust is grounded in individual beliefs about peer reliability, dependability and competence (McAllister, 1995).

Within the knowledge management literature, a variety of studies have examined the impact of trust on knowledge sharing, both qualitatively (Peroune, 2008; Teerajetgul et al., 2008) and quantitatively (Politis, 2003; Lucas, 2005; Holste and Fields, 2010), in a range of different contexts. While differences in the use of instruments and conceptions of both trust and knowledge adopted by these researchers makes it difficult to directly compare their results, a theme does emerge: trust is an important antecedent of knowledge sharing and use.

However, few studies that we are aware of have directly examined the impact of students' interpersonal trust on their tacit knowledge sharing activities during group projects, yet much of the pedagogical research we have reviewed has significant implications for the present study.

The general importance of the role that interpersonal trust plays in students' group work can be seen in a survey conducted by Matveev and Milter (2010) of 114 students across two universities in the United States engaged in a group project. In response to the survey, 61% percent of students reported that trust was an important aspect of team effectiveness, while 26% cited issues including communicating with and learning to trust team members, as challenging. However

it must be noted that precisely which type(s) or dimensions of trust are meant by students' responses here is unclear.

The potential importance of affect-based trust for students' group work has been highlighted by Remedios et al. (2008), who studied the reasons for silent participation in tutor-led small learning groups. The case studies of individual students they presented highlight two significant findings for the present work; first, it was apparent that cultural differences impacted upon students' willingness to contribute in the session. Second, some students did not wish to contribute as they were concerned about losing "face" - that is they were concerned about the way they were perceived by their peers based on their contribution. This is important as it suggests that a lack of affect-based trust was present – and we would assume (naturally) that such fears would be mitigated where students feel a sense of mutual care and concern for each other.

Similarly, a study by Lejk and Wyvil (2002) found that students had trouble working with strangers, indicating that the lack of an interpersonal relationship is problematic, and the students in their study reported high-agreement that they would rather choose their own groups - although the level of agreement with this statement fell by the conclusion of the group work.

In addition, a factor that may affect students' level of interpersonal trust is the amount of time they have spent with each other. A number of researchers suggest that trust is created over time (Lyons and Mehta, 1996; Huxham and Vangen, 2004) and is often developed through iterative processes. This suggests that second and third year undergraduates (and a selection of postgraduates) may exhibit higher levels of interpersonal trust.

Thus, the present work has been undertaken with the intention of providing insights into this currently under-researched topic and to provide recommendations for pedagogic practice.

Research Method

We recruited 32 undergraduate and postgraduate students within Bangor Business School who have taken part in group work projects to participate in the research. The demographic characteristics of the participants were diverse including both male and female students, of varying ages, from Britain, Europe, India, China and other overseas countries. Details are provided where available.

To understand and explore students' perceptions and experiences of group work we conducted 6 focus groups and one semi-structured interview with students from each year group during June. All students within the Business School were contacted by e-mail in May and asked to participate. A small incentive (of ten pounds) was offered for participation. Once we had all participants' details, we arranged focus groups by year.

Each focus group was facilitated by two researchers, one of whom (Bejan Analoui) led the discussion while the other made observations of students' behaviours. The discussion was semi-structured, with questions being asked that addressed each of the research objectives. All sessions were recorded and transcribed. The transcripts were coded both by hand and using NVivo version 7.

The following key questions were asked in each focus group:

1. Have you had any positive experiences during group work?
2. Have you had any negative experiences during group work?
3. Have you found group work to be a good way to share your skills with others?
4. Have you found group work to be a good way to share your beliefs, ideas and opinions with others?
5. Is it easier to share your skills, beliefs, ideas and opinions with group-members you are close to or who are friends, or who are competent, reliable and good at the work?
6. Which of the following allocation methods do you prefer: self-selection, random and engineered¹
7. How can we improve group work?

Following each focus group, the discussions were transcribed and observations aggregated, and a thematic analysis of the data was performed to enable comparison of viewpoints within and across groups. The transcripts were read by all three researchers and each of the emerging themes were discussed and agreed.

Findings & Discussion

In what follows the key themes and sub-themes drawn from the findings are presented and discussed; where appropriate participants' voices are given priority in attempt to bring the reader closer to the often emotive discussions. This was evident from the very first question, as illustrated below.

Second Year – Focus Group

Bejan: “*Why don't we start with a general discussion of your positive experiences of group work*” (Y laughs, her countenance displays a certain amusement)

Participant 5, Female: “*Positive?*” (She is still smiling)

Bejan: “*Okay, we can skip positive and go straight to negative*” (They all laugh)

Postgraduate – Focus Group 1

Bejan: “*Okay so let's start off in a very general way - let's start with positive experiences of group work*” (“They look unsure, perhaps hesitant and there is a short silence)

Bejan: “*Now there may not be any, which is fine and we can move straight to negative experiences but if anybody can think of anything they enjoyed about group work or that they learned from group work it would be a nice time to share it.*” (They all smile, some laugh)

¹ Explanations were given

This emotional reaction - general amusement (often accompanied by silence) to the question of positive experiences of group work was common to the majority of groups. The facilitators' notes for the Second Year session reads "*I don't think this is what they came here to discuss! :(*", an intuition which was common at all sessions. Indeed, as the length and emotional content of the discussions of negative experiences clearly outweigh those of positive experiences, this intuition is arguably supported.

Nonetheless most participants did share positive experiences of group work, and five broad themes emerged: that they were able to share their skills and ideas with others, divide their work, get to know their colleagues, learn to work well with others and become acquainted with different cultures. These themes also recurred during the ensuing discussions surrounding their preference for who they would work with and methods of group allocation and so are discussed below (see 5.3).

Negative perceptions and experiences

Postgraduate - Focus Group 1

Participant 13, Male, Indian, Age: 32: "*I am a victim of negative experiences*" (He speaks loudly and with emotion. The other participants laugh, smile, and many offer what can be described as sympathetic looks)

The request for participants to share their negative experiences of group work were often met with emotional responses of smiles and laughter, and the researcher felt as though many participants engaged enthusiastically with these discussions, almost as if they were pleased to have the chance to unburden themselves. Therefore, it is perhaps unsurprising then that accounts of negative experiences of group work amongst all participants were both more frequent and emotive than those of their positive experiences, and their dissatisfaction and in some cases apparent distress seemed to have numerous causes.

Group work was often described by participants as stressful, frustrating, time-consuming and often spawned inter-personal conflict or social awkwardness and anxiety. While multiple themes emerged, many of the comments made and experiences recounted anticipated the facilitators' later questions and so have been interwoven with the discussions in the remaining sub-sections of this report.

However, three predominant issues arose when discussing negative experiences: the first was that of "free-riders," the term used by participants to describe group-members who made little or no positive contribution to their group work efforts (and in some cases had a distinctly negative effect); the second was problems of group-leading and more broadly the mechanisms used for decision-making; the third was issues surrounding working with those from other cultural backgrounds, which as highlighted above was not perceived as negative by all.

The Free-rider problem

Postgraduate – Focus Group 3

Participant 28, Male, Indian, Age: 25: "*Group work is more time consuming, especially contacting each other and arranging meetings... there can be*

personality clashes and it is difficult to motivate people if they don't want to take part" (P3F2 agrees)

Participant 25, Male: *"Yes it's very difficult to involve people who don't want to contribute"*

Postgraduate - Focus Group 1

Participant 17, Female, Indian Age: 24: *"...Some do their work for the sake of doing it while thinking that the other person will do very well, and that they will take care of the assignment - that person is really good at it and will take care of that assignment, so it is really a dependency and we face all these problems in group work"*

Bejan: *"So you said dependency... you mean they are dependent on you to do the work?"*

Participant 17: *"Yes"*

Participant 13, Male, Indian, Age: 32: *"Most of the members [in his group] were free-riders, we were given a deadline but we do the work and they don't, in the end the grade was much lower than it should be"* (He is clearly distressed and angry, the rest of the participants agree with his point)

The problem of free-riders is well documented in the pedagogical literature (Maiden and Perry, 2011) and throughout the sessions it was often discussed alongside other issues – such as group members who did not regularly engage with their groups but nonetheless wished to participate at a later stage and the burden that this created for the remaining group members. Indeed, a number of participants described feeling compelled to do the tasks assigned to the non-contributing member(s), to ensure that their group work assignments were completed in full.

Second Year – Focus Group

Participant 3, Female, British, Age: 21: *"...It [group work] can sort of end up with one person doing a large majority of it and either this person resents the rest of the group or then takes all the credit even though they shouldn't have done"* (Y Agrees)

Third Year - Focus Group

Participant 9, Female, Chinese, Age: 22: *"My only experience of group work is that it is terrible, in the end I did all the work"*

Participant 8, Female, Chinese, Age: 23: *"I'm not in favour of group work, it was not a good experience for me I had to stay up all night to complete other members work"*

Although many participants were visibly aggrieved by these issues, they often explained that they understood that motivations varied between students, the following is a typical example of the comments made:

Postgraduate – Focus Group 2

Participant 22, Female, European, Age: 23: *"...Some people just come here to get the degree and the certificate because it's good to study in the UK University without the expectation to have an A or whatever, and other people come here, pay much money and maybe have a loan or whatever and really struggling to get the best out of it. And then it's hard if you see that"*

somebody really doesn't care and you are caring a lot and you are all in the same boat. I get the feeling it's just really... What do they want from this, just passing or doing a really good job?"

Yet while some highlighted the free-rider problem as a purely negative experience, others viewed it as a chance to learn:

Postgraduate - Focus Group 1

Participant 18, Male, Chinese: *"I think the purpose of group work is not just to finish the work, it's like you face some difficulty like free rider situation, how can you solve this problem. Or how can you.. move on? That's one of the skills you need to face when doing your group work, so if you want to do his or her job that's your choice you can do it but you can find another way to solve this problem... yeah"*

While the exploration and resolution of the free-rider problem is beyond the scope of this report, the present work highlights that participants across all levels at the Business School do face these issues (effects include increased workload, frustration and lowered attainment) and that they need to be addressed. In addition, if, as we argue, group work is a viable mechanism for the sharing of knowledge then this can only be improved by alleviating these problems and increasing participation.

Indeed, the numerous problems associated with free-rider problem documented here and elsewhere (Davies, 2007, Maiden and Perry, 2011) arguably provide evidence that the self-selection allocation method is to be preferred given the natural assumption that students who wish to participate will choose to work together. While this may not remove the problem entirely (self-selection does not guarantee these problems will not occur) this may at least provide an increased sense of ownership and control for students, who often expressed feeling as though the outcome of group work is in part a matter of chance.

5.1.2 Group-Leading and Decision Making

Third Year - Focus Group

Participant 12, Male, British, Age: (mature): *"There shouldn't be a group leader; we weren't told there should be. Why should a student have that extra pressure? Everyone should be equal and no one should have to manage poor performance that should be done through the marking or by telling the module leader"*

Participants' experiences of leading groups, group leaders and decision making varied within the all year groups. Indeed, there were two lines of consensus: that the group leader is burdened with extra responsibility, and that group leaders lacked the authority, or as some put it *power* to effectively lead their groups. Yet not all thought that group leading was important or necessary, a number of students recounted experiences of shared leadership and group decision making, finding that this was the most appropriate way to organise and manage their group work projects. However, it was also highlighted that shared decision making can be time-consuming and adopting a leader can be more efficient.

The following vignette taken from the second year focus group highlights both the burden of group leadership and a variety of problems that they faced, including a lack of authority:

Second Year – Focus Group

Bejan: *“Something we’ve been talking about, we talked about it because you all mentioned it was the idea of a group leader, let’s try and develop that a bit, have you been group leaders and what does that involve?”*

Participant 5, Female: *“What does it involve? Calling them, chasing them, emailing them, messaging them...”* (She laughs)

Participant 3, Female, British, Age: 21: *“Trying to find a time that suits everyone”*

Participant 5: *“I know...”*

Participant 3: *“Okay Saturday at 3 O’Clock ooooooh, Sunday.. Sunday at 4, No... Some point in the future because the assignments due in two days”* (The others are nodding)

Bejan: *“So scheduling is difficult? You mentioned allocating tasks, let’s pick that up”*

Participant 6, Female: *“Well people tend to say ‘Well I’m prepared to do this’ but sometimes you just have to give people stuff do and sometimes they might not do it... so it’s hard... yeah that’s pretty much it”*

Participant 3: *“It does end up with one person trying to delegate to everybody, like more often than not people don’t like it, they don’t like being told what to do, but if they’re not told what to do they won’t do squat...”*

Participant 5: *“Exactly”* (she laughs)

Participant 3: *“I’ve been in a group where it was sort of like ‘Just leave it, it will be fine, she doesn’t want to fail, she’ll do it’ So it did end up with me having to rewrite the whole damn thing at like 10 o’clock at night, the hand in was midnight”*

These problems were common to the majority of groups; in particular co-ordinating meetings and group activities was a difficulty and this led some to suggest that there may be too many group work assignments (some took part in four) for them to engage in them all effectively.

Yet despite the difficulties the three second year participants who had been group leaders stated that their experiences had taught them how to be more effective in this role in the future, nonetheless they did not want to take part in group work again. Two of the participants’ experiences were so negative that their module choices for their final year had been influenced, and they sought modules that had little or no group work. Similar situations were described by a number of postgraduate students, and one participant told of a colleague who had dropped a module purely because he did not like his group.

Additional problems surrounding group leadership were so-called personality and power clashes, difficulties in finding mutually acceptable ways of working and problems with strong powerful leaders who insisted on courses of action that others found undesirable. Given that participants who were in groups that adopted models of shared leadership had considerably less problems it would appear that this may be the most appropriate method, and should be advocated and championed by module leaders. However, as a number of postgraduate participants highlighted, even when no formal leader was chosen, participants did emerge and take a

leadership position; importantly it was noted that this tended to be individuals who were most engaged, and concerned with achieving high marks, often as the vignette above highlights taking on the work of others, and in some cases re-writing whole pieces to ensure that their own grades did not slip.

This consideration, again, leads to the recommendation that a group allocation method of self-selection should be preferred, while it may not ensure a positive experience it may mitigate some of the issues by allowing students to work with those with similar motivations, expectations and timetables. There are likely to be two consequences of this, the first is that those students who are highly motivated are likely to have a more positive experience, working with like minded individuals. The second is, if as suggested, individuals have been doing the work of an entire group to ensure a high grade, then when these individuals are removed and from what would otherwise be low-performing groups the overall attainment level for modules may drop considerably.

Cultural Backgrounds

Culture has been defined as the shared values, beliefs and assumptions shared by a group (Schein 1983) and participants' experiences of working with students from different cultural backgrounds were mixed; some found it entirely problematic, while the majority stated that although problematic they found it to be of benefit to their self-development. The problematic experiences highlighted included frustrations at different ways of working, at different attitudes to group work, education in general, and language barriers. While participants tended to identify these issues as being due to differences in national cultures, the issues reflect more generally the problems of working with those who hold different values as described throughout this report. That working with individuals with different cultural backgrounds can be difficult is unsurprising; and this issue is well documented within the field of organisational behaviour (see for example, Hofstede, 1986; Davies, 2007).

The following vignette of an exchange between three postgraduate participants is indicative of the majority of views, expressing the different aspects of the debate:

Postgraduate – Focus Group 2

Participant 23, Male: *“You have to mingle with students from other countries; you have to learn to know about them”*

Bejan: *“So that's interesting, for you it's not just about the work it's about something more?”*

Participant 23: *“Yeah because like people from other countries you can work with them, that's a good experience for us”*

Participant 20, Male, British, Age: 28: *“It's good experience for us because you can be friends with people but when you work with someone that's when you get to really know their culture better so erm appreciating other people's cultures it's good”*

Participant 22, Female, European, Age: 23: *“To be honest I think now everybody hates me but I don't agree with it, I know that lots of people are having the same thing – trying to avoid... it's a bit hard to say, but try to avoid working with some cultures because it's known that it's hard to work with them. So I agree it's interesting to get to know their kind of working style whatever but sometimes I get the feeling that, or experience from*

elsewhere that there is a big big big clash, I know that you can gain a lot from it but (garbled) most of the time it makes things really really complicated” (She occasionally pauses while talking and appears to be choosing her words carefully)

Participant 20: *“Yeah I used to be of that opinion but I think it depends on the person”*

Participant 22: *“Sure” (She interrupts)*

Participant 20: *“Coz I used to think those people from that nationality... I’d rather not, but it depends on the person”*

Participant 22: *“Sure, I know it’s hard to say err like this nationality I’m not working with but I think in general it’s just a cliché, like a stereotype but in general you’ve done the experience before and erm you’ve seen it with other people and they are always like it. Okay it’s really not like this it’s just a thing in the head; I don’t think it’s good but...”*

Participant 20: *“It’s right eight times out of ten, you’re probably right but it depends on the individual doesn’t it”*

Participant 22: *“Yeah, sure sure and you have to think about it, it’s just I have a feeling that especially here in Bangor this gets really...”*

Participant 21, Male: *“I guess sometimes it’s difficult to work with other cultures because maybe with different culture different idea and different experience so maybe yah like she said maybe sometimes there’s a clash but I guess just with different idea, we can discuss areas together and figure out a way to solve this difference.”*

The issue of culture is important for consideration of knowledge sharing and group-allocation methods. In theory, engineering student groups to create diversity provides the opportunity for students to receive and share their values, beliefs and ideas with respect to ways of working and the group work content with those from backgrounds they may not otherwise come into contact with. In addition, given the globalised nature of many industries, and the multi-cultural talent pools in numerous organisations it could be argued that this a valuable experience. Indeed, numerous participants highlight the value of working with those from other cultures with precisely this in mind:

Postgraduate – Focus Group 1

Participant 17, Female, Indian Age: 24: *“You mix with different cultures and you take option to understand that person’s knowledge, so there your experience is more. Because we are MBA students we need more experience not only the grades, we have to tackle problems tomorrow in the society so we have to step up in the group work so that is a great opportunity if we are picked randomly.... We are facing today the problems we are not waiting till tomorrow.... Again like the third option [engineering groups] you suggested such as working with different cultures, having that experience and that is also very good”*

In addition it can also be argued that a negative experience of working with others is also of value, as it highlights for the student that they may not wish to work in a global or multicultural environment or perhaps that multi-cultural working is a skill which they need to develop.

However, it may be unwise to draw strong conclusions from this aspect of the research. While many participants enthusiastically shared their views about working with those from different cultural backgrounds, a number of participants (especially the second years) required significant encouragement to speak. The matter is arguably sensitive, and many seemed reluctant to engage in the debate and this was perhaps not helped by the multicultural mix of the sessions. Thus, the views expressed may not be representative of all those in attendance.

The various experiences (positive and negative) led the facilitator to pose the question of whether the students' preference was to complete individual assignments or group work. With the exception of the second year group who were unanimous in their desire to engage in individual assignments, and a few dissenting voices among the remaining participants, the general consensus was that group work is a valuable experience.

The preference for individual assignments was that it provided a greater sense of ownership - the students can work at their own pace, pursue their own ideas and work to their own timetable and did not have to rely on others:

Second Year - Focus Group

Bejan: *“Okay then if you all prefer individual assignments – what’s better about them?”*

Participant 5, Female: *“You can stick to your idea and if you don’ finish it you don’ finish it. You finish it you finish. It doesn’t depend on the members of a group, so yeah”*

Participant 6, Female,: *“You can work at your own pace yeah... you have more control over it”* (She giggles)

Participant 4, Male, Overseas Student: *“It’s easier to manage time, don’t have to wait for slow group members”*

Participant 3, Female, British, Age: 21 : *“You can work on it whenever you want. I work a full time job as well as doing my degree so I end up spending a lot of my time at 2 or 3am sat doing assignments and University work and let’s face it nobody else in a group with me would want to sit up at 2 or 3am they would all be too drunk”*

Postgraduate - Focus Group 1

Participant 13, Male, Indian, Age: 32: *“I think it is better to go individual assignment, individual work, as I told you before in group work you must depend on other persons for their contribution.”*

Those in favour of group work provided multiple reasons: group work is fun; you get to know people; experience new cultures and new ways of working; provided a forum for sharing knowledge; it is an opportunity to learn to be diplomatic and it is perceived as good practice for future employment. However, these positive evaluations often came with caveats: these benefits are only derived in certain groups, typically those that work well together; some students felt they took part in too many group projects and that after a while there are significant diminishing returns on the value of the experience; others highlighted dissatisfaction with the assessment weighting of group work projects (generally it

was 60% group work 40% individual); and others suggested that not all types of assignment are conducive to working in groups.

Thus, while we are confident in asserting that our students benefitted from their group work experiences, we are cognizant that changes need to be made. As one third year undergraduate put it, we believe the major issue we are now facing is to find a way to make group work least unpleasant and most equitable for those who contribute the most.

Knowledge Sharing

All participants were asked whether they had experiences of sharing their skills, beliefs, values and ideas (reflecting the dimensions of technical and cognitive tacit knowledge, respectively) with others during group work and following these discussions they were asked whether they believed it was easier to engage in these types of knowledge sharing with group members they were close to, perhaps friends with, or those who they perceived to be competent, reliable and hard-working (loosely reflecting the concepts of cognitive and affect-based trust). Three common themes emerged: first participants across all year groups had limited experience of sharing skills; second, they were more frequently engaged in sharing their beliefs, values and ideas and this was seen as a positive aspect of group work; third while interpersonal relationships were seen to impact upon the degree to which knowledge sharing took place, the major contributing factor to this phenomenon was participants' motivations and desired outcomes for their work rather than their interpersonal relationships.

Sharing of Skills

Postgraduate – Focus Group 1

Participant 16, Female, Chinese, Age: 25: *“Think it is very difficult to share the skills for example we have a group for say presentation someone might be quite good at preparing for the script, somebody may be good at searching information, someone will play the role of presenter so everybody has different skills and if we turn it around. **Example if different person plays another role giving the presentation but he’s not quite good at that it might be problem** so yes maybe it’s quite good sharing knowledge is easier rather than sharing skills”* (Emphasis added)

Bejan: *“Okay I think we’ll come back to that in a second so no sharing of skills, anybody learnt anything from someone in a group – a skill?”*

Participant 19, Male, British: *“I’ve shown someone how to use software programmes”*

Participants across all year groups highlighted that they had limited experience of sharing their skills, or having others share their skills with them during group work. Yet there were a few reports of skills being transferred, and these tended to be such things as showing a group member (or being shown) how to use a software package, help with academic referencing and one participant described being given help in the construction of a balance sheet. In addition, a number of participants highlighted that while they may not have learnt skills from others, the experience of group work was useful in teaching them social skills.

That more complex skills were not shared is arguably unsurprising: it is well known that the sharing of skills is time consuming and difficult (Nonaka and Takeuchi, 1995) and given that students have multiple assignments and possibly extracurricular commitments it is likely that they may not have been able to find time to do so. In addition, as the opening vignette suggested, numerous participants felt that it was more conducive to the success of their projects to allow each group member to complete the tasks that they were most competent at.

Furthermore, the structure of group work tasks was often seen to be a barrier to the sharing of skills (and also often a barrier to the sharing of beliefs, values and ideas). The following is indicative of many of the comments made:

Postgraduate – Focus Group 1

Participant 19, Male, British: *“Group work can be good for sharing skills and there is nothing inherently wrong with it, I think the problem is the structure of group-work and usually on the assessment side of things, how it is assessed and that can cause imbalance and probably the wrong type of focus so you don’t really get the benefits from group work that group work can bring to the project and instead you just get some of the problems”*

Postgraduate – Focus Group 2

Participant 20, Male, British, Age: 28: *“Haven’t really developed my skills, got on with what I was good at and left them to do what they were good at, the end product was the best it could be”*

While participants had completed a variety of group assignments, most participants described working on a group report or presentation, which, once they had assigned work into different sections, were pursued somewhat independently with little consultation with each other. While this may be seen as negative, participants expressed the belief that being able to draw on the skills of others to complete their group assignments was a positive aspect of group work:

Second Year - Focus Group

Participant 5, Female: *“All though there is a task given, you don’t have to do every single thing, you can divide it in to little groups of people, so... I can do the introductions, so at the end you know you just do each part and put them all together... so I think that’s a nice thing”*

First Year - Focus Group

Participant 1, Male, Indian: *“So my opinion in a group work is... that proper allocation of time can be saved because as many other person are working together, so collective reports and people ideas occurs into a same place”*

Similarly, a number of overseas students highlighted that it was useful to work with British students as they are able to benefit from their grasp of the English language, and in return are able to offer skills which they felt these students lacked (particularly mathematics):

Second Year - Focus Group

Participant 4, Male, Overseas Student: *“It’s a good way to share my own skills, like Asian... Chinese or Vietnamese they are good at calculating numbers so like they can do the question about mathematics, they can figure it out. British is good at English and do the comments and this is very important”* (Y laughs and agrees)

Bejan: *“So I’m hearing that maybe group work isn’t the best vehicle for sharing skills”* (They all nod, laugh and agree)

Postgraduate – Focus Group 2

Participant 21, Male: *“Like us our English is not that good so we can work together with some other friends, some other class mates they can just do the language part”*

Participant 20, Male, British, Age: 28: *“Everyone has got their own strengths, erm so like this guy [Participant 21] was saying, erm in some of my groups I’m not too great with computers but maybe someone in the group is so I could maybe write all of the English and one of the colleagues in a group could put it all together neatly in a presentation so everyone’s got their own strengths that they can contribute”*

Although a lack of time and a focus on achieving the best assessment score are viable explanations for the lack of skill sharing, a third explanation can be found within the knowledge management literature. An important environmental consideration for the encouragement of knowledge sharing of this type is that individuals spend time together, within shared spaces (Nonaka and Takeuchi, 1995; Nonaka and Konno, 1998; Eppler and Sukowski, 2000). If participants divide work in the way described, and then proceed to work independently and separately from each other, the opportunity for knowledge sharing is lost.

Sharing Beliefs, Values & Opinions

Undergraduate – Focus Group

Participant 2, Male, Indian: *“Ermm... Working in a group it’s like you get many different, for one single goal or motive you have so many different views then... you have options to choose from because obviously your mind can’t function in multi direction mind, you would gain something in your perspective in your own different view from rest of the people everyone has their own single view”*

Participants regularly described sharing beliefs, values and ideas with others during group work as a positive experience and that this took place with greater frequency than the sharing of skills; a number of participants were enthusiastic in recounting their experiences.

Third Year - Focus Group

Participant 12, Male, British, Age: (mature): *“Group work is refreshing it’s an opportunity to see others experiences and I was impressed with their positivity - it was fun”* (He speaks quickly and enthusiastically)

Participant 10, Male, Chinese, Age: 21: *“It’s good to share ideas and help others”*

However, this type of knowledge sharing was also described as difficult and this is unsurprising. It is well known that groups go through a *storming* stage in

which beliefs, expectations and preferences for ways of working are shared and negotiated, often involving significant conflict (Tuckman, 1965). Importantly, such a process is seen as vital pre-cursor for establishing group norms and subsequently working effectively together.

Second Year - Focus Group

Participant 3, Female, British, Age: 21: *“It’s difficult to work in a group with people especially if we all have separate beliefs of something because they vary so much from attitudes from experiences. because you can use them as sort of tools in order to progress whatever your doing, beliefs are so strongly set that you can’t really have someone arguing with you in a group which then it makes it really awkward in a group”*

Bejan: *“Do you think that makes it difficult to share those beliefs and values with other people?”*

Participant 3: *“I think so yeah”*

Participant 6, Female: *“I think in that case you have to hold back some of your thoughts because you have to meet everyone half way basically”*

A third perspective on this form of knowledge sharing was that it is not particularly valuable with regards to learning about course content or the group work assignment but rather that what is of value is learning about others’ personal experiences, something which is not necessitated by group work. In addition, participants again highlighted that the way in which they chose to structure their assignments and complete their tasks independently led to a lack of opportunity for knowledge sharing:

Postgraduate - Focus Group 1

Bejan: *“Okay then let’s forget about skills, what about sharing knowledge? Is it [group work] a good opportunity to share beliefs, values and ideas with other people?”*

Participant 16, Female, Chinese, Age: 25: *“Yes because I am taking the course of MBA so lots of students have work experience with different cultures and backgrounds so it is a good opportunity for them to share their experiences of their industry and their expertise”*

Bejan: *“And it happened? It has actually happened?”*

Participant 16: *“Yes”*

P1M7: *“For personal experience I agree it’s not something you can easily get from a journal and find or go and read in a book, it has to come from other people so yeah”*

Participant 18, Male, Chinese: *“I don’t know, I’ve done some group works with different people from different countries and what we do is... yeah sometimes we share information because it is group work but different people do the specific areas they are good at. So when he or she does some work we can mix them all together but we don’t really need to really understand what’s that, because this is your part and we can link them all together and then we have this essay and it works. We don’t need to understand every single sentence what they mean we just need to make whole piece of work. So from my experience it’s not really working that way”*

Participant 19, Male, British: *“So the personal experience I was talking about probably doesn’t end up in the piece of work its actually just you know a thing on the side but I agree with what you’re saying that sometimes you specialise you do your little bit and then you piece it all together at the end and maybe if you’ve got an editor then they probably have a better grasp of*

the whole piece than anyone individual and there are areas that perhaps not everyone in the project will know about"

Participant 14, Male, Indian: *"There may be some area to share, some opportunity to share personal experience but it is not necessary it should provide always because in some of the work there is no meetings. In one of my experience there is only one meeting for my group work so it is not providing any opportunity to share personal experiences"*

Although concerns surrounding the value of knowledge sharing during group work were only raised occasionally, this does provide one explanation of barriers to knowledge sharing. If students hold firmly to the notion that any relevant information can be derived from other sources, then they may be unlikely to engage other students in discussion. If true, this appears prima facie to be an argument that group work is non-essential. Yet we would argue that by placing students in groups, particularly those which are randomly assigned or engineered, it gives them the opportunity to come into contact with students from different backgrounds that they may not otherwise do. This line of thinking was also raised by participants during discussion of methods of group allocation (see 5.3).

A theme running through the discussions of sharing skills, beliefs, values and opinions was that knowledge sharing often did not take place (or was reduced) because participants' groups were dividing work between them and pursuing their tasks independently. This prompted the facilitator on each occasion to ask students about their motivations for group work to determine whether participants involved in group work were more concerned with benefitting from the experience of group work, or if they were focused on attainment.

The majority view across all year groups was that their focus was on achieving the highest possible marks, although others highlighted that the experience was nonetheless important, as the following vignettes show:

Second Year - Focus Group

Bejan: *"When you undertake group work are you focussed on the mark at the end or on the experience of working together?"*

Participant 6, Female: *"Group work I think is mmm at the end of days just to get marks y'know for the marks is the crucial part"* (The other participants nod in agreement)

Postgraduate – Focus Group 2

Bejan: *"When you were doing group work were you focussed on getting the best possible mark or benefitting from the experience of working in a group? Let's go round the room and get everyone's perspective"*

Participant 20, Male, British, Age: 28: *"Best mark"* (He responds quickly)

Participant 23, Male: *"Marks"* (Again a quick response)

Participant 21, Male: *"Marks first"*

Postgraduate – Focus Group 3

Participant 24, Female, Indian, Age: 24: *"I am focussed on having fun"* (she smiles)

Participant 30, Female, Chinese, Age: 23: - (She doesn't speak, and despite the facilitator's efforts has spoke only once throughout the session)

Participant 28, Male, Indian, Age: 25: *“Well we need to get the work done but also need to enjoy the group”*

Participant 27, Female, Overseas student, Age: 24: *“I want to maintain academic performance but I also want to enjoy the group work. There is an opportunity to learn lifelong skills, and University can be an incubator for that”*

Participant 26, Male, Indian, Age: 27: *“Yes, acceptable academic performance, but it has to be fun or the work will suffer”*

Participant 25, Male: *“Getting the work done but gelling also”*

This understanding of participant motivations is important as it provides vital context for participants' views on interpersonal trust-relationships and preferences for group allocation methods.

Knowledge Sharing and Relationships

Third Year - Focus Group

Participant 7, Female, Chinese, Age: 22: *“I'd rather work with someone who is good... my friends might be free riders and I care about my marks”*

Participant 8, Female, Chinese, Age: 23: *“Yes, I agree with that”*

Participant 11, Male, Overseas student, Age: 21: *“I rather with work with friends, it's easier to push them it's more comfortable”*

Participant 12, Male, British, Age: (mature): *“It's best to start off choosing friends and if they don't perform, next time you chose people who will perform. The natural inclination to go with friends because you trust them but if you don't know how they're going to perform it's best to go with good people”*

Throughout all focus groups, participants expressed different views on the issue of sharing knowledge with those they were close to and those they believed were competent, reliable and good at the work; participants highlighted both advantages and disadvantages, suggesting that the relationship between affect- and cognition-based trust and knowledge sharing is complex.

In some of the discussions, participants expressed the belief that it was easier to share knowledge with those who they felt close to, while also commenting that it may be difficult to share knowledge with those who were seen as competent:

Second Year - Focus Group

Participant 6, Female: *“Yeah, people you like better, you are more comfortable you can easily share what you ever you want to say, if you dislike a person it might come across in very different way in a more negative manner because you have that like.... towards them”*

Bejan: *“Okay let's ask everybody”*

Participant 3, Female, British, Age: 21: *“Well if people are good at what they do then you can usually see that and it might make you take step back, but people you like you are obviously going to be a lot more comfortable, but it's a little more difficult to say 'actually you're wrong' if you like a person because they might take it on a personal level”*

Participant 4, Male, Overseas Student: *“I rather share with people I like”*

Participant 6: “*Yeah same... people because people who are good at the work are likely to think about everything they think is right, so whatever I say they are just going to do it their own way so I probably take a step back*”

Bejan: “*So let’s turn it round and ask who would you think it is easier to learn from?*”

Participant 6: “*I think it’s both in this case mmm because if you can see that someone’s good at the work you will be more trusting of their opinions or whatever and if you like them it will be easier to learn from them*”

Participant 5, Female: “*I think I can learn more from people who are good at the work It depends whether the person I like is good at the work or not good at the work*”

Participant 4: “*Learn more from people who are good at work, they have experience, know how to do things learn from him*”

Yet, as the above vignette shows, it was felt that it was more appropriate to gain knowledge from those who are competent – and this is an intuitive and rational choice. However, substantially different perspectives were expressed by participants in other groups. As the following vignette shows, it was seen as preferable to work with those who were competent and it was also seen as being easier to share and learn from these people – as personal relationships did not interfere with the workings of the group:

Postgraduate – Focus Group 1

Participant 17, Female, Indian Age: 24: “*Someone who is good at the work*”

Bejan: “*Do you think it may be easier to share ideas with these people?*”

Participant 17: “*Yeah exactly, obviously because you’re very official generally you don’t have any personal relationship. You can be friendly officially, it’s very good, both people are thinking in one aspect, so it’s very good both individual minds are thinking one information, so gathering information is more high so you can y’know get into that aspect or that area very easily so it will be very friendly to work with that person*”

Participant 19, Male, British: “*You worry less about treading on toes and disrupting other aspects of your relationship with people, if you’re working with some you don’t know as well but you know is good and will knuckle down to the work rather than close friends who may not necessarily have the same work ethic or whatever*”

Bejan: “*Is that something everyone feels?*”

Participant 16, Female, Chinese, Age: 25: “*Choosing a colleague is different choosing a friend so I can have a friend as well as a colleague*”

Bejan: “*And you prefer the colleague?*”

Participant 16: “*Yeah if it is a work case*”

Bejan: “*Any other thoughts?*”

Participant 13, Male, Indian, Age: 32: “*We are focussing on grade, so colleague, those who do well we are attaching to them*”

Thus, the discussions revealed that participants’ interpersonal relationships were important factors in their experiences and perceptions of knowledge sharing during group work, and yet revealed no particular consensus. This is somewhat coherent with the knowledge management literature, which highlights the importance of both affect- and cognition-based trust for knowledge sharing and use (see for example, Lucas, 2005; Holste and Fields, 2010).

The implications of these findings for the most suitable method of group allocation to encourage knowledge sharing are largely unclear. Given the differences in participants' perspectives, it is arguable that the most appropriate solution is to allow students to choose the method of group allocation they feel is most appropriate and conducive to their own knowledge sharing and learning. Indeed, it is arguably unsound pedagogical practice to force a method of group allocation on students who would not find it beneficial.

Yet, given that the majority of participants described their motives as being to achieve the highest grade possible, it is quite likely that the result would be that students will select an allocation method (presumably self-selection) that is most conducive to this rather than to learning and knowledge sharing. Indeed, as described above, high attainment and effective group work were not necessarily seen as interdependent. This implies that the design of group assignments may need to be rethought if knowledge sharing is a key learning objective.

Perceptions and Experiences of Group Allocation Methods

Postgraduate - Focus Group 1

Participant 19, Male, British: *'At the start of the year it might be difficult picking other people for the group work and In those situations maybe it's better that it's either randomly assigned or distributed [engineered], but my personal preference normally is to be able to pick colleagues because otherwise you feel a little bit like you're **rolling dice with your degree or you're in a lottery** or something and when you're coming to do a course you're here for a reason, you're paying money and you don't want feel like you're gambling with your grades.'* (Emphasis added)

The discussions of different group allocation methods revealed that participants' preferences for group allocation depended on three broad considerations; the first was their desired outcomes of group work; the second was the point in time at which group work was undertaken; and the third were the various problems and issues associated with group working detailed throughout this report.

While participants had different experiences and perceptions of the allocation methods, the majority agreed with the sentiment expressed by Participant 19 (above) – that being placed in a random or engineered group allowed them to meet new people, but also contained an element of chance, or luck that meant their performance in assessments might be to a large extent outside of their control. Those who focussed on attainment described a preference for self-selection, as did those who were concerned about the potential negative impact of working with those they did not know:

Third Year - Focus Group

Participant 11, Male, Overseas student, Age: 21: *"I Prefer student assigned [self-selection], randomly doesn't really make sense"*

Participant 12, Male, British, Age: (mature): *"I think assigned is the best solution as it is the only solution where the student has input"* (Others nod and vocally express agreement)

Postgraduate – Focus Group 1

Bejan: *“Okay let’s jump forward to semester two, we’ve already done some group work how would we pick now?”*

Participant 19, Male, British: *“Erm again pick my own”*

Participant 18, Male, Chinese: *“Yeah, in theory we should have group selected randomly but I would know some people who are good at something and from my point of view I would want to achieve as highest mark as we can so maybe want to chose good people in my group so I can get a higher mark so maybe I would chose, pick by myself”*

Participant 17, Female, Indian Age: 24: *“I have an opportunity to pick my own so I’m going to take it”* (The rest agree that they would now self-assign)

Second Year - Focus Group

Participant 4, Male, Overseas Student: *“The first one select group on my own chose friends it’s more convenient, I don’t like its allocated by the lecturer and third one there will be lots of conflict, cultural difference it’s not a good thing”*

However, a number of participants who opted for this method (including P1M7 above) noted that this method was likely to be unfair as the most able and competent students were likely to work together. The fairest option was perceived to be allocating groups randomly:

Postgraduate – Focus Group 2

Participant 20, Male, British, Age: 28: *“People weigh each other up – it [self-assignment] works but leaves the weaker people. Good from individual point of view but not overall”*

Participant 23, Male: *“Yes I agree it’s better for me but not overall”*

Participant 22, Female, European, Age: 23: *“I prefer it, but it’s not necessarily good for me – I could learn way more from tutor allocated”*

Interestingly, this common line of thought seems to not only imply that the less able members of their cohort would have benefitted from the presence of the most able but that it was seen as most equitable that this should take place. However, we would disagree; on the contrary we feel it is most equitable that students receive a grade for their work which is consistent with their abilities and performance and not a grade that reflects the abilities of the highest performing members of a group. Indeed, a number of participants described completing the work of others whose contribution they felt was not of the requisite standard to achieve their desired grade, and it is this practice that we would argue is most inequitable for all. It increases the burden on the most able, reduces the opportunity that arises from formative assessment for whose work is re-written, and where a single mark is given to all group members unfairly rewards those who are undeserving.

Participants who described wanting to learn from the experience of group work, most often opted for the random allocation method:

Postgraduate – Focus Group 1

Participant 18, Male, Chinese: *“Yeah I would prefer the randomly selected because for example, from year 1 to year 3 you’re doing group assignment”*

with all your friends, I don't think you can learn as much as with new people, I think you can learn from the group work it's not really beneficial to find some group friends and doing all assignment together for three years. You can't learn as much from the group work, you kind of lose the purpose"
Participant 16, Female, Chinese, Age: 25: *"In this case would say maybe it depends on different personality because I am the one who is always willing to meet different people, new peoples so I chose random"*

Postgraduate – Focus Group 3

Participant 26, Male, Indian, Age: 27: *"Multicultural and other differences in a group can give more chance to learn"*

Indeed Participant 31 described some dissatisfaction with his experience of group work. He was part of a self-selected group and found himself working alongside five of his countrymen; he suggested that his learning experience would have been enhanced had he been able to work those of different cultural backgrounds:

Postgraduate – Semi-structured Interview

Participant 31, Male: *"And err... we can choose by ourselves the group members, so we chose err those students that are from the same country. I think that this maybe changed for some way because since I think it is better to have students from different countries in your groups, so it needs to be arranged maybe by organiser to err to assign different students to different groups, not to select by themselves"*

The phenomenon described by Participant 31 in which students spontaneously congregate in ethnically-similar groups is known as 'clustering' (Davies, 2007). As Davies argues, clustering may not be conducive to learning as it tends to lead to a stifling of discussion or (worse still) discussions in the first language and avoidance of English entirely. He recommends that this can be overcome, or at least addressed in part, by insisting on a mixture of ethnic groups but allowing students to join groups in pairs, i.e. two Chinese, two Indonesians, two Welsh, and two English etc. This preserves the advantages of ethnic group clustering and minimises the disadvantages. Furthermore, such an approach may preserve some of the benefits of self-selection and engineered allocation methods highlighted, arguably providing a sense of ownership and reducing the perception that group work is a "lottery" while also providing an opportunity for mixing with individuals from different cultural backgrounds.

The postgraduate participants were asked to describe what would their preferences be at the beginning of a course, and would these preferences change by the second semester. While a number still opted for self-selection and random or engineered allocation in both cases, a clear pattern emerged. At the beginning of the academic year, there was a preference for random allocation, while for the majority in the second semester the preference was for self-selection. However, it is worth noting that the random and engineered allocation methods were reported and perceived to cause problems, such as difficulties in finding group members and a variety of subsequent issues that arise from working with people they did not know – as described above.

There was a clear rationale behind this choice: random allocations at the beginning of the year provided an opportunity to get to know other students, and

some even reported making friends. Yet it was also seen as a way to determine who not to work with again, as one student (P20) remarked “You know who you will never work with again”. In the second semester the preference for self-selection can again be understood in reference to their desired outcome. Those who sought a high-level of attainment opted for self-selection, whereas those who were in favour of meeting new people, working with different cultures and the overall experience of group work opted for random or engineered allocations.

Drawing these different perspectives together again reveals that participants’ motivations are a key factor in determining their preferred methods of group allocation. Again, the conclusion we draw from these findings is that it is most appropriate to allow students to choose the method of allocation they feel is most suitable and conducive to their own goals.

Ultimately, while it may be desirable to randomly allocate or engineer groups to provide the opportunity for knowledge sharing within diverse groups this is only so if participants are willing and motivated to share knowledge in this way. For the majority, this was not the experience they described.

Improving Group Work

Bejan: *“Okay great so lots of ideas here, so let’s open it up a bit more let me ask you something a bit more open – umm how do you think we could make group work better?”*

Analysis of the discussions of ways in which group work could be improved revealed three broad themes: that module leaders should be more involved in the process by guiding and supporting students, and managing issues of non-contribution; that training or guidance should be given to students to prepare them for their group-work experience; and finally that assessment mechanisms should be revised.

While these three themes were evident across all year groups, the undergraduate groups discussed the recommendation that module leaders should be more involved with greater frequency and fervency than their postgraduate counterparts who emphasised their belief in the importance of training and preparation.

Module Leader Involvement

Second Year – Focus Group

Participant 5, Female: *“If possible someone being there to supervise you, if your just left alone umm yeah then people can end up doing nothing so mm yeah I think it’s going to be good if like the lecturers are there saying, this week you have to focus on this, or by this week you have to finish your introduction”*

Bejan: *“So do you want supervision or guidance?”*

Participant 3, Female, British, Age: 21: *“I think like alternating it so like one week the lecturer says you right need to get this point off you go and then the next week you join up so ‘right how did you do let’s have a look at it and see if we can make it better”*

Bejan: “So let’s return to this idea of supervision and guidance – specifically what would we be looking for? (There is a long silence) I mean if we were to implement this tomorrow what would you be asking the supervisor to do?”

Participant 5: “Tell the group members to choose the one who doesn’t work and mark them down”

Participant 3: “To be supportive point them in the right direction, usually if you get stuck in group work you email the lecturer who says ‘I’ve given you all information now get on with it’ which is sort of rubbish especially if you’re stuck”

Bejan: “Do you think the information provided at the beginning is sufficient?”

Participant 3: “For at that time, then probably yeah but as you get further into the group work there is obviously more challenges and a lot more issues that need resolving and they’ve not necessarily been catered for in the original planning”

Bejan: “Do you think the lecturer has to be the supervisor or can it be a teaching assistant?”

Participant 5: “It could be anyone”

Participant 6, Female: “As long as they have an idea about the work, coz if we’s ask questions and they don’t really know then it doesn’t help”

Postgraduate – Focus Group 2

Participant 22, Female, European, Age: 23: “There should be some kind of control to stop people doing nothing”

The above vignettes are indicative of the comments made by most groups, and while there is a clear logic to their recommendations, the degree to which they can and should be implemented is questionable. Logistically, close-supervision of students’ group work activities is likely to be time consuming, and for module leaders who have multiple commitments and teach large classes it is not likely to be possible. However, even if it were possible, it is not clear that close supervision is preferable. While it is clear that mechanisms need to be in place to deal with non-contributing members and to solve critical issues as they arise, an appeal of group work is that it offers a chance for independent learning and problem solving and a reliance on the module leader may serve to limit this.

Aware of the time-constraints placed on academics, the facilitator often asked whether teaching assistants (typically doctoral candidates) would provide a suitable alternative to module leader involvement. The common perception was yes, but with the caveat that they have the necessary subject knowledge, time, interest and power to perform their role properly.

Training Sessions

MBA students in the Business school are given the opportunity to attend a one-day workshop provided by an external training centre that focuses on group working with individuals with different cultural backgrounds. A number of participants reported that this was a valuable experience and that more of these opportunities would be useful. Although these options are resource-intensive they may provide a way to increase the benefits of group working and mitigate some of the problems reported. Others highlighted that they had been to seminars or workshops provided by their module leaders which were helpful in preparing them

for group work. With the exception of the first year group the suggestion from all other groups was that more of these opportunities should be provided.

This suggestion is attractive, as any introductory text to organisational behaviour makes clear training in group working skills is likely to improve group performance (see for example, Mullins, 2007) and if co-ordinated at the School or Departmental level, such sessions could be offered centrally and thus limit the additional resources required from individual academics.

Assessment

Concerns surrounding assessment and the resultant suggestions for improvement were varied. A number of participants felt that too great a weighting was placed on group work and that this leads to tensions, frustrations and many of the difficulties described throughout this report. A number also suggested that group work was too frequent, and that the benefits to be gained from the group work experience could be gained with one or two group assignments.

Concerns over the weighting of group assignments may be valid and something which requires change; as noted the majority of the group work assignments were worth 60% of the overall module grade and thus the importance of the group work assignment for those focussed on attainment was considerably high. However, while the suggestions of lowering the weighting seems a simple way to solve this problem there is an inherent difficulty: when the weighting is lowered it necessitates that the amount of time that should be expended on the project is reduced and thus a substantial piece of group work cannot be expected, limiting the opportunity for interaction between students.

Other suggestions such as the use of peer-assessment to deal with non-contributing members were made and the implication was that this would provide a sense of ownership for the remaining group members (although some found this unfavourable):

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Participant 27, Female, Overseas student, Age: 24: *“Don’t like the idea of peer assessment it’s horrible/threatening”*

Participant 29, Female, British, Age: 38: *“That’s life though isn’t it...I’d be open to it but I think people do struggle to give objective and constructive feedback”*

Participant 24, Female, Indian, Age: 24: *“I openly invite feedback but worry about hurting people’s feelings”*

However, a positive experience of group work assessment was highlighted by a number of postgraduate students who had taken a particular module. This assessment method involved the student receiving two marks; one mark was given for the overall group work and a second mark was given based on the individual student’s contribution. This would appear to be a strong solution to this issue of assessment as it provides a sense of ownership for individuals while retaining the importance of group working.

Suggestions that the number of group work assignments a student should be involved should be reduced may be valid, but that validity depends on the

pedagogical perspective adopted. If the aim is to expose students to group work and give them opportunity to learn group work skills then arguably one or two group work assignments is sufficient. Alternately, if the purpose is to emphasise and provide an opportunity for knowledge sharing then a variety of group work assignments is preferable.

Discussion

The present research project has revealed a variety of interesting findings that have important implications for the way in which group assignments are designed, and undertaken by students. However the focus of the discussion is to determine the implications of the findings, to answer the central research question: **Is there one best method of allocating students to groups when the purpose is to maximise knowledge sharing?**

Thus the following discussion is limited to discussing the described barriers to knowledge sharing, the impact of participants' interpersonal trust relationships on knowledge sharing and the impact on methods of group allocation.

Barriers to Knowledge Sharing

It was highlighted in the introduction that group working can provide a valuable opportunity for student learning and, importantly for the present research, an opportunity to share skill-sets and experiences (Livingstone and Lynch, 2000; Plastow et al, 2010). Yet, this only holds where students are willing to engage in knowledge sharing; our findings indicate that while many of our participants were willing, and described having shared knowledge, there were often barriers. The free-rider issue, and issues of non- or limited contribution to group work was a central cause of concern and often frustration and proved throughout to be a decisively emotive issue. The discussions with participants revealed their dissatisfaction with unreliable group members, implying the importance of interpersonal relationships (specifically cognition-based trust) for effective group-working and thus our results are somewhat consistent with other research that highlights the importance of trust for student group working (see for example, Matveev & Milter, 2010). The free-rider problem also raises questions of student engagement. If the problem is as widespread as participants suggested, then a large portion of the student cohort may be significantly unmotivated, and potentially not just with respect to group work. While this is, in itself, an important issue, it raises two barriers for knowledge sharing. First it implies apathetic attitudes to knowledge sharing, which reduce the likelihood that knowledge sharing will take place (Wang 2006; Alwis and Hartmann 2008) and second it means that the opportunity to spend time in the shared physical or virtual spaces, which are necessary for knowledge sharing (Nonaka et al, 2000; Viitala, 2004), is lost.

Concerns over a lack of opportunity to work together were also raised by participants, and often due to logistical difficulties in finding an appropriate time in which to meet. This is of import as it is a problem which has been found to reduce knowledge sharing in organisations (see for example, Goh, 2002). Moreover, there is consensus within the knowledge management literature that direct communication between individuals is the most effective method of sharing tacit

knowledge (Herrgard, 2000; Politis, 2003, Peroune, 2008). Yet, while this may be problematic for our students, it is not insurmountable. Opportunities for communication via social-networking sites and email provide a virtual option and the University has a number of buildings which are available to students twenty four hours a day. In addition, the majority of lectures and tutorials do not run later than 5pm and so there is arguably ample opportunity for the majority of students to fit in group working within their schedules. It is likely that the problem is again an apathetic attitude to group working (and by extension knowledge sharing).

Apathetic attitudes towards knowledge sharing were also described or implied throughout the discussion of sharing skills, and beliefs, values and ideas (broadly akin to technical and cognitive tacit knowledge). Some participants were openly apathetic toward the value of knowledge sharing, while others highlighted that the ways in which group work assignments were completed (typically split into sections and completed independently) meant that little knowledge sharing took place. While this may be seen as a feature of the assigned tasks, which clearly did not necessitate interdependency and group-working, it is also clear that the option for knowledge sharing was there for those who wished to partake. Yet, as the findings revealed, this often did not happen – and many participants reported that despite perceiving knowledge sharing to be a potentially positive aspect of group work – knowledge sharing did not always occur.

While solutions such as changing assessment mechanisms or instituting a greater degree of supervision over group work projects may convince some current and potential non-contributors to take part, it is unclear that this will have any real positive effect. There needs to be an intrinsic motive to share knowledge, as Ehin notes: “the generation of knowledge is an indiscernible voluntary cooperative process... New ideas cannot be forced out of people who often do not know exactly what tacit knowledge they possess” (2008 p.338).

Interpersonal Trust and Methods of Group Allocation

The findings of the present work also demonstrate that interpersonal trust relationships are an important factor in group work; and they can be interpreted as highlighting the importance of both affect- and cognition based trust for knowledge sharing. This is in line with the knowledge management literature on the topic (see for example, Lucas 2005; Holste and Fields, 2010).

However, participants’ views were divergent and there was no common theme: some perceived affect-based trust to be important for knowledge sharing; others saw it as something of a barrier – and likewise with cognition-based trust. While this is useful in highlighting the importance of interpersonal trust relationships, it provides no rationale for the adoption of one method of allocation over any other. However, it does imply that it may be worthwhile for module leaders to try to help develop these types of relationships amongst students.

While this is a difficult task, there are a number of options. For example, the use of group working throughout lectures and seminars may provide a way to bring students together, and offer the opportunity for them to begin to develop both kinds of interpersonal trust relationship. In addition, facilitating discussions between students during lectures and seminars may also help students to impress their

competence on each other, increasing cognition-based trust (although the opposite may also occur!). However, as trust is often said to be created over time (Lyons and Mehta, 1996; Huxham and Vangen, 2004) and often developed through iterative processes, it may be that efforts that take place over the course of one semester or module are not sufficient and that a more widespread change to teaching methods is required to achieve this objective.

The analysis of participants' discussions of preferences for group allocation did not provide any rationale for adopting any one method of group allocation to maximise knowledge sharing amongst students. As discussed above, participants' preferences for group allocation depended on three considerations: their motivations and desired aim of group work; the point in time in which the group work assignment took place; and their perceptions of the implications of the three methods.

Importantly, while those who were primarily focussed on exchanging views and ideas with others, and more generally learning from the experience of group work, favoured the random or engineered allocation method, those who were focused on attainment preferred to self-select their groups. Given that for postgraduates these views were also dependent on the point in time in which group work occurred, it is clear that is untenable to recommend one particular method of group allocation.

Indeed, if any of the three group allocation methods that have been discussed were implemented, this would only serve to meet the interest of a portion of students, and we argue this would be an unsound approach.

Drawing the implications of these findings together suggests only one answer to research question. Given the various barriers to knowledge sharing, differing perceptions of the importance of interpersonal trust relationships, preferences for group allocations and participant motivations, there is no discernable best method of allocating students to groups to maximise knowledge sharing.

Thus, we believe that the best that can be achieved is to arrive at a solution that allows those who wish to engage in group work for the purpose of sharing knowledge with their colleagues the means to do so, while ensuring that those with different motivations do not hinder this activity.

Conclusions

Therefore, based on the findings of this research, we conclude that the most equitable way to proceed with group work is to allow students to choose the allocation method that they feel is most appropriate to their needs. This returns a degree of ownership to students, and provides the best possible opportunity for students to work with like-minded colleagues to pursue their own aims and fulfil their individual needs from their group work experiences.

Given the dearth of studies addressing the issue of knowledge sharing in the pedagogical literature, we also conclude that this research makes a small but important contribution to the literature. Finally, we conclude that these research findings make an important contribution to practice and can assist educators make

informed decisions about managing group work to increase student engagement in knowledge sharing, a valuable learning activity.

Opportunities for Future Research & Limitations

To capture the impact of this research, we intend to incorporate the findings into our own practice in the next academic year, experiment with some of the participants' various suggestions and further assess students' experiences of group work. Also, we have arranged to disseminate the findings to our colleagues within the University, we will encourage them to do the same and will attempt to capture this during further focus group research. In addition, we will seek to capture the impact in our partner PGCertHE universities through telephone interviews. Therefore, this small project may inform practice, and lead to underpinning a wider study, across Wales.

This study has also generated other areas of future research. As there is a paucity of research detailing the impact of students' interpersonal trust relationships on knowledge sharing during group work projects there are numerous avenues of potentially fruitful inquiry. However, one unexpected phenomenon uncovered through this present work is that group working was often an emotional experience, with participants' descriptions of events and perceptions portraying emotions ranging from frustration and distress through to joviality. Thus, we believe that an investigation into the emotional affects of group working and its effects on knowledge sharing would be fruitful.

The qualitative nature of our inquiry means that usual caveats with regards to the generalisability and transferability of the findings must be considered. Furthermore, the research was conducted at a point in the academic year when a large number of the student body may no longer have been present and as result different numbers of participants were drawn from each year group and thus it is likely that their views may not be representative of the wider student population.

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