Knowledge Sharing in Higher Education: A Study of Students Preparing Assessed Group Work

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ABSTRACT:

This study investigated the knowledge sharing behaviours of undergraduate students in the context of preparing assessed group coursework. Questionnaire responses from 81 students and content from 12 semi-structured interviews were analysed to address questions related to how knowledge is shared between students and what motivates students to share knowledge. The study highlighted a number of issues that could help inform the design of coursework in future with respect to enhancing the knowledge sharing experience.

Keywords: *Knowledge sharing, HE sector, group coursework, motivations, barriers.*

1.0 Introduction

Knowledge sharing has gained a lot of interest as organisations have come to appreciate its positive impact on organisational effectiveness and competitive advantage. Unsurprisingly, then, much research has been undertaken at the organisational level in the business sector and lessons have subsequently emerged. However, knowledge sharing is not only of interest and value to commercial organisations; lessons about knowledge sharing can be learned from, and subsequent benefits gained in, other sectors; one such sector is higher education (HE), as this study shows.

Knowledge sharing activities in a student context have long been of interest. Almost 80 years ago, Bos (1937, p.315) showed that: "…students could learn to formulate ideas and opinions more effectively by communicating them to others". Committing to this principle calls for an understanding of what motivates students to share knowledge, and identification of any barriers that prevent them from doing so. Moreover it calls for an exploration of the influence of particular student-related scenarios e.g. preparing assessed group work, on their knowledge sharing behaviour. Hence, this study addressed the following questions:

- How is knowledge shared between students?
- What motivates students to share knowledge?
- What implications do the knowledge sharing behaviours of individual students pose for knowledge sharing in coursework groups?

This paper is structured so as to directly reflect the research activities that were undertaken. The study began with a review of the literature that highlighted the tools that students tend to use for knowledge sharing, their barriers to sharing knowledge and the motivational factors that support knowledge sharing amongst students. The process for empirical data collection was then designed – students registered with a specific academic department volunteered to participate in the study with 81 usable questionnaire responses returned and 12 interviews undertaken. Analysis of the quantitative and qualitative data triggered a wider discussion about the themes introduced in the literature review and enabled lessons to be drawn out for the HE sector and beyond.

2.0 Literature Review

The following introduction to related literature sets the backdrop to the empirical work and draws attention to some of the influences on the knowledge sharing behaviour of students.

2.1 Value Of Knowledge Sharing

An important determinant of students' knowledge sharing behaviour is whether knowledge sharing adds to the knowledge they possess or whether it has no effect. Uncovering the effects of knowledge sharing leads to the concept of peer tutoring. During peer tutoring, Forman & Cazden (1985) asserted that there is a need for the less knowledgeable student to assume the tutee role and the more knowledgeable student to assume the tutor role. In this way the less knowledgeable student gains knowledge from the more knowledgeable one. Later, Franz *et al* (1999) were more cautious. They argued that students may be tempted to focus on discussing information that they share in common, thereby neglecting to share and discuss information they uniquely possess. In other words, Franz *et al* (1999) imply that sometimes there is a danger of students not gaining anything from the knowledge sharing process as no new knowledge is shared.

According to Sharratt and Usoro (2003), if individuals in a group place the same value on knowledge sharing, then they are likely to acknowledge its importance and benefits. Therefore, students are likely to share knowledge if they place a high value on the knowledge they anticipate to receive from their colleagues. Two important themes arise from this preliminary discussion - barriers and motivational factors to knowledge sharing.

2.1.1 Barriers To Knowledge Sharing

While there is a general consensus that fear of providing wrong information, fear of being perceived as a show off and so on, are barriers to students' ability to share knowledge, Majid and Yeung (2007) go a step further and introduce the idea of social

relationships. They assert that a lack of depth in student relationships is a contributing factor to barriers in knowledge sharing. Soller (2004, p.213) seems to agree with this idea by stating that; "it is the group members' individual behaviours and the dynamics of their interaction that play an important part in the knowledge sharing process".

The topic of barriers to knowledge sharing has largely focused on face-to-face knowledge sharing only. Research by Chen and Yang (2007) acknowledged barriers that exist in social networking. Two barriers, namely the difficulty in finding relevant knowledge and difficulty in finding relevant collaborators to interact with, emerged from the research. It could be put forward that these barriers might have been caused by the lack of social relationships among students as suggested by Majid and Yeung (2007).

2.1.2 Motivational Factors To Knowledge Sharing

While researchers such as Majid and Yueng (2007) have concluded that students' degree of knowledge sharing is mainly dependent on their attitudes and motivation, Cheng and Ku (2008) suggested the contrary. Their research, carried out with educational technology students, argued that it is knowledge sharing that affects students' motivation, attitudes and achievement. In other words, a positive feedback loop exists between knowledge sharing and motivation.

Majid and Yeung (2007, p.487) amplify an important observation made by Droege and Hoobler (2003) that reciprocity, together with trust, promotes knowledge sharing. The idea of reciprocity as a feature of knowledge sharing cements a distinction between knowledge sharing and knowledge transfer; the latter having been identified as peer tutoring by Lockspeiser et *al* (2006). Lockspeiser *et al* (2006) however, seem to imply that the whole knowledge sharing process is both mechanical and formal – whereby one of the students has to assume either the tutor role or tutee role. This gives the impression that knowledge sharing is a one-way communication process. From this observation it can be concluded that peer tutoring without emphasis on reciprocity takes away the true essence of knowledge sharing; knowledge sharing is a two-way communication process.

2.2 Channels Of Knowledge Sharing

The increasing importance and relevance of the internet and web based technologies has influenced researchers to focus their research on social networking platforms e.g. blogs and wikis, and how these impact on students' sharing of knowledge. Authors such as Benckendorff (2008) have asserted social networking platforms as effective tools students use to share knowledge and Boulos *et al*. (2006, p.2) have stressed the importance of online platforms such as wikis. These relatively recent views, naturally, differ from earlier views regarding the most effective channel for students' knowledge sharing. For example, Sharratt and Usoro (2003, p.189) stress the importance of face-to-face interaction by quoting Pierce (2002): "this suggests in face-to-face interactions, conversations can be an effective conduit for knowledge sharing. Indeed it has been suggested that conversation may be the only effective means of knowledge sharing".

However, Harley *et al* (1999) assert that it is the type of knowledge (tacit or explicit) shared that determines the type of channel used. They add that explicit knowledge may be transferred through electronic communication devices, but tacit knowledge requires face-to-face communication. Nevertheless, research by Tan (2009) based on students' knowledge sharing behaviour using blogs, revealed the possibility of blogs supporting the sharing of tacit knowledge, although he conceded that there is a degree of difficulty in doing this. While face-to-face knowledge sharing, as described by Majid and Yeung (2007), is influenced by social relationships between students, Tan (2009) suggests the opposite takes place when sharing knowledge online. He proposes that social relationships become a product of blogging, as students who may sometimes not know each other build personal relationships after sharing knowledge about their interests and experiences online. Once again, the notion of circularity and a positive feedback loop is evident.

3.0 Research Design

The study took a predominantly subjective approach. As Walliman (2005, p 270) points out that with an objective approach individuals have a "shared reality of perceptions". With a subjective approach however, individuals have different perceptions of, in the context of this study, their attitudes towards knowledge sharing and what motivates them to share their knowledge.

The sampling method used was a combination of both random sampling and convenience sampling. There was random sampling in the sense that there was an equal chance of individuals participating in the project by responding to email invitations sent to all students and convenience sampling in the sense that it: "involves using what is immediately available" (Walliman, 2005, p.278). In this case, 325 undergraduate students from an academic department provided the convenience sample and were invited to participate. Walliman (2005) adds however, that this method does not present the opportunity to check if the sample is in any way representative of its kind, thereby making the results of the research applicable only to that sample.

3.1 Data Collection Tools

Two data collection tools were used: questionnaire survey (quantitative method) and face-to-face interviews (qualitative method). Berg (2007, p.3) provides a distinction between the quantitative method and the qualitative method by stating: "Qualitative research refers to the meanings, concepts, definitions…descriptions of things; quantitative research refers to the measure of things". Therefore, while the research intended to measure, for example, the most preferred knowledge sharing channel (quantitative), there was also a need to gain an understanding of why a certain channel was preferred to the other (qualitative).

3.1.1 Survey Questionnaire

An electronic self-administered questionnaire was used. Due to their limited possibility of vagueness closed questions, as opposed to open-ended ones, were mostly used. This was in line with Fowler's (2009, p.120) understanding that: "Self-administered questionnaires mainly should be restricted to closed answers...When respondents are asked to answer in their own words, the answers are usually incomplete, vague and difficult to code...".

The questionnaire consisted of 3 sections, with the first part (questions 1-3) asking for respondents' personal details. The second section (4-8) asked respondents about their motivations for and attitudes to knowledge sharing in general and also about how they practised knowledge sharing in terms of the channels used. The final part (9-11) asked participants about their attitudes towards and motivations for knowledge sharing in a coursework group.

To measure the attitudes of students' knowledge sharing behaviour, there was need to make use of an attitudinal rating scale, in the form of a 5 point Likert scale. Likert scales are defined as "…devices used to discover strength of feeling or attitude towards a given statement." (Bell, 2005, p142). It is however important to note the following limitations of Likert scales as suggested by Brace (2004). There is a problem of central tendency, whereby respondents are reluctant to use extreme responses i.e. 'strongly agree' and 'strongly disagree'. Another problem is pattern answering, whereby a respondent falls into a routine of ticking boxes in a pattern rather than actually representing their views.

3.1.2 Interviews

The decision to use interviews as a research tool was arrived after carefully considering other methods, focus groups in particular. Moore (2000, p.124) advises that: "Focus groups force people to consider how they feel about issues in light of other people's feelings". Taking heed of this advice and remaining mindful that one of the objectives of the research was to investigate what motivates individual students to share knowledge and what their personal attitudes are towards it, focus groups were rejected.

Since each and every study is different, it is not clear in the literature on the most suitable number of interview participants required for research. Kvale (2008, p.43) advises to; "Interview as many subjects as necessary to find out what you need to know". He however cautions that if the number of participants is too small, it is difficult to generalise differences among groups; on the other hand, if the number of subjects is too large, there will hardly be time to make penetrating analyses of the interviews.

Results drawn from the questionnaire presented differences across gender and the study year of students, hence these factors were taken into account in deciding the number of people required to participate in the interviews. Hence an e-mail was sent to the undergraduate cohort in the department, inviting 12 individuals to participate (i.e. 2 males and 2 females from each of the 3 study years) with participants selected on a first-reply basis.

The interview consisted of two sections. The first section (8 questions) served to probe the interviewee on their motivation and attitudes on knowledge sharing while the second section (6 questions) asked interviewees to share their knowledge sharing experiences in coursework groups. Questions were a mixture of attitudinal, probing and prompting questions as illustrated by Table 1 below.

Once a pilot study had been completed, the main data collection proceeded.

Table 1: Types Of Interview Questions

Attitudinal questions, e.g.	Do you have any concerns about sharing your knowledge with peers on a piece of coursework?
Probing questions, e.g.	Have you ever approached students in another year for assistance on a piece of coursework? (if no) Please explain why? (if yes) Was the person you approached someone you were acquainted with? Had you approached other students in your year beforehand?
Prompting questions	Please rank your preferred information source (1=most preferred; 5= least preferred) for doing coursework -consult the lecturer -use the internet -use library resources -consult other students -other (please explain your choices)

4.0 Data Analysis

This section shares the results from the questionnaires and interviews. It goes on to identify themes that have emerged from analysis of the data collected.

4.1 Overview

Figure 1 below illustrates the responses according to the 81 participants' study years.

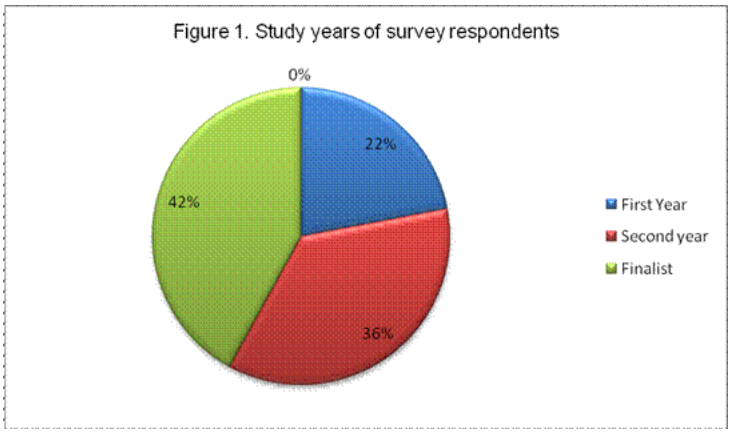


Table 2 illustrates participants according to gender as a percentage of the total gender in each study year:

Table 2: Gender In Each Study

Year	No. of males	As a % of total no. males in each year	No. of females	As a % of total no. of females in each year
1	4	6%	14	33%
2	14	20%	16	30%
3	14	31%	19	59%

The participating academic department had a male to female ratio of 1.45**:**1. Conversely, in this research; the 29 male and 52 female respondents meant a gender participation ratio of 1**:**1.79. In fact, more than half of final year females took part in the survey. This led into a consideration of the effects of gender on knowledge sharing.

4.2 Gender And Knowledge Sharing Behaviour

The questionnaire revealed gender differences in relation to whether participants were afraid that others would perform better than them if they shared their knowledge (Table 3).

Table 3: Gender And Grade Competition

I am afraid others will perform better if I share what I know with them						
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
Male (%)	5(16)	9(29)	8(26)	6(19)	3(10)	31
Female (%)	2(4)	12(27)	14(31)	12(27)	5(11)	45
Total	7	21	22	18	8	76

Table 4: Gender And Having Friends/Acquaintances In The Same Coursework Group

I'd rather be in a group largely consisting of my friends and acquaintances						
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
Male (%)	9(30)	13(43)	4(13)	2(7)	2(7)	30
Female (%)	10(22)	18(39)	7(15)	10(22)	1(2)	46
Total	19	31	11	12	3	76

Table 4 shows that a greater proportion of males (73%) either agreed or strongly agreed that 'I'd rather be in a group largely consisting of my friends/acquaintances' than of females (61%). Additionally, 22% of the females disagreed with the statement compared to only 7% of males.

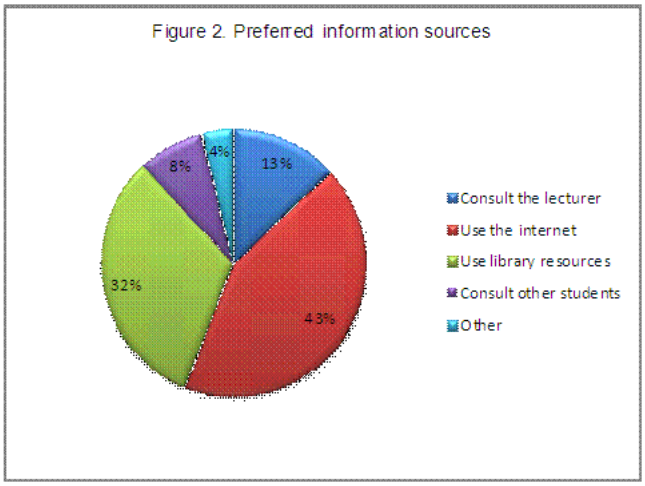
The interview question: 'Is it important to have your friends and acquaintances in your group?' was then used to get more insight on these differences. It transpired that there were more males i.e. 5 out of the 6 interviewed stating that it was important, whereas it was 3 out of 6 for females. A recurring theme among the males was the idea that having friends in a group would contribute to the social aspects of the group, hence one of the respondents stated: "It is good to have a bit of banter with friends". On the other hand, females who were opposed to the idea of having their friends/acquaintances expressed concerns about being distracted by them.

Moreover, when asked: 'In cases when the lecturer tasks students to form groups, do you feel it is important that you take the initiative to look for group members, or don't you mind being invited to a group already formed by someone else?' it emerged that 4 out the 6 males interviewed were eager to form their own groups, whereas only 2 out 6 females would do the same and 3 of the remaining females were indifferent. Two of the males stated that; "I feel comfortable with certain people" and "It has to be someone that I know, so that it's easier to communicate". What this implies from both the survey questionnaire and the two interview

questions is that males prefer working with their friends and hence strive to form their own groups consisting of their friends/acquaintances. Females, on the other hand, are either indifferent or happy to work in groups not consisting of their friends.

4.3 Preferred Information Sources

Figure 2 illustrates survey results from respondents who were asked to select their preferred information sources:



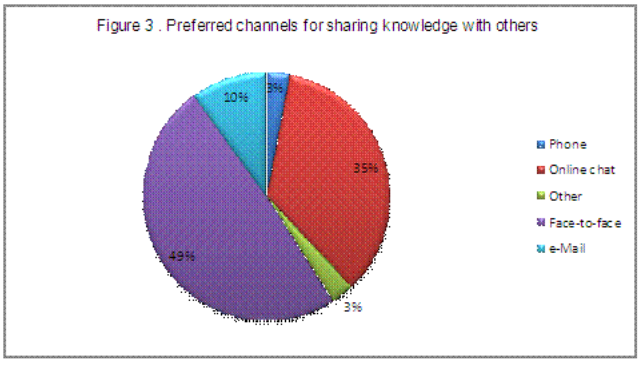
These survey results were reinforced by responses from interviewees. A common remark made by interviewees was that lecturers were the most credible and knowledgeable source, but at times were not accessible. Hence one interviewee, when comparing lecturers and fellow students as information sources, stated that: "Views of other students are important; lecturers can be difficult to approach". From these observations it can be deduced that, while using the internet and library resources were the most popular sources of information, participating students placed more confidence and trust in the knowledge of their lecturers. At times, however, they had to consult other students.

It was interesting to note how the questionnaire respondents' year of study affected their preferred information source as shown in Table 5.

Table 5: Information Sources And Respondents' Study Year

Preferred information sources	Year 1(%)	Year 2(%)	Year 3(%)
lecturer	20	20	60
internet	26.5	29.4	44.1
library resources	16.7	50	33.3
fellow students	16.7	66.7	16.7
other	0	33.3	66.7

4.4 Preferred Channels For Sharing Knowledge



When asked to state their most preferred channel for sharing with others, face-to-face and online chat were the most preferred with 49% and 35% respectively as shown in Fig 3.

When asked to explain their choices, it seemed most interviewees were keen to emphasise the advantages that face-to-face contact has over e-mail. For example, they appreciate the instant sharing of knowledge in face-to-face interactions.

Table 6: Knowledge Sharing Channels And Respondents' Study Year

Preferred knowledge sharing channel	Year 1(%)	Year 2(%)	Year 3(%)
Phone	0	50	50
Online chat (Facebook, MSN) etc.	18.5	44.4	37
Other	0	100	0
Face-to-face	23.7	31.6	44.7
e-mail	25	25	50

Table 6 illustrates the two channels; online chat and face-to-face are separated by less than 13% in all three study years, signifying that they are preferred by students in all three study years. However, it seems half of finalists prefer e-mail and phone. Nevertheless, interviewees' responses do not show a particular trend of finalists favouring these two channels.

4.5 Performance In Assessments

The survey questionnaire revealed that of the three assessment methods in the department; 48% of the respondents said they have performed best in individual-assessed coursework, 35% in group-assessed coursework and 17% in exams. The same question was asked in interviews to get interviewees to gain a deeper understanding of why this was the case. Half of the respondents said they performed best in exams, with lack of trust being the common reason among the interviewees:

> 1M1: "I am an exam person - with group coursework you have people that let you down".
> 2M2: "Exams and individual-assessed coursework, I have been let down a number of times in group coursework".
> 3F1: "With individual assessment, you don't have to rely on group members' contributions which may be incorrect".

It seems the interviewees were not confident in their group members' ability to deliver on a task.

4.6 Knowledge Sharing And Fear Of Plagiarism

The final question in the questionnaire invited respondents to make comments regarding the survey. The following comment emerged: "Concerned about issues of plagiarism when it comes to discussing coursework in general". The researcher was keen to investigate the reasons behind this comment, but there was need to avoid using leading questions. Therefore, instead of asking if participants had concerns about plagiarism, the interview question was phrased as: 'Do you have any concerns about sharing your knowledge with peers on a piece of coursework?'. Half of the interviewees had fears of plagiarism. The following were some of the responses:

> 1M2: "Yes, I am a bit concerned about people copying my work".
> 2F2: "Yes, fear of my work being plagiarised".

These responses and others highlighted that plagiarism was a concern for both sexes and all study years. An additional quote implied that the individual is more likely to share his knowledge with people he knows, but is not comfortable sharing with those he does not know. An issue of trust, again, arises here. However, interviewees who had no concerns about sharing their knowledge indicated: "No, happy to share, sharing is caring" and "No, as long as they don't copy my work". The latter quote interestingly reveals that, although the respondent conveys no concerns about sharing their knowledge, the idea of plagiarism is still an issue to them. The former quote reveals that the interviewee perceives knowledge sharing actually as a good deed to one another. In addition, another interviewee stated: "No, we all aim to achieve a high mark, hence we should share". From this quote, the interviewee views knowledge sharing as an important factor in academic performance.

4.7 Knowledge Sharing Between Coursework Groups.

As well as investigating knowledge sharing within coursework groups, there was need to understand how knowledge is shared between coursework groups. The idea was to gain insight about how the collective attitudes on knowledge sharing of all individuals in a group would affect their overall behaviour in sharing knowledge with other coursework groups. Interviewees were asked the following two questions:

> a) Have you ever been in a situation whereby, as a group, you felt the need to seek assistance from another group for a piece of coursework?
> b) Have you ever been in a situation whereby your group was approached by a member of another group seeking assistance on a piece of coursework?

One answer to question (a) revealed that, although the group had been helped, there were disagreements within the other group's members whether they should have been. Likewise, one of the answers to question (b) revealed that: "Yes, we helped them but there were protests from some of my group members". Another interviewee stated that they gave the other group limited information and did not want to give away everything. This implies that, differences in individuals' attitudes towards knowledge sharing translate to differences within a group, with those who fear the group's work being plagiarised opposed to those who believe in helping others.

5.0 Findings

Drawing from the results above, it is clear that there are a range of barriers and motivators to knowledge sharing in group assessed coursework for a particular cohort of students. Learning to manage such barriers and motivators, a responsibility for both students

and staff, could enhance the knowledge sharing activities of such students and, in turn, raise the standard of submitted work.

5.1 Division Of Labour

An important conclusion drawn from this research is that, in group-assessed coursework, there is the problem of group members splitting work amongst themselves and then later on hurriedly putting it all together to meet the coursework deadline. The probable outcome is that students are unlikely to appreciate the full advantages of the opportunity to share knowledge during group discussions and do not get the time to actually learn from the coursework experience. This defeats the whole purpose of knowledge sharing within coursework groups. When the group disbands, minimal knowledge is gained from the coursework as each individual goes away with what they have researched for the part they were tasked to do. In organisations, the same problem is often faced by project teams, whereby no time is taken to reflect on what has been learnt on projects after the team is disbanded.

5.2 Lack Of Trust

Trust seems to be a determinant of whether students withhold or share knowledge. Due to concerns about plagiarism, students were not sure if they could trust peers to share their knowledge with them. Sharing knowledge with peers belonging to the same social network seems to reduce this concern, but does not dispatch it completely. Moreover, there is a problem of group members not having confidence in others' ability to do their bit of the coursework. It is possible that group members openly discuss openly their strengths and weaknesses for the task, so that the challenging parts and less challenging parts are matched accordingly with each member's ability. However, this allocation of work may not be favourable to all group members.

5.3 Virtual Learning Environments

Students stated face-to-face as the most reliable and effective knowledge sharing channel. Online chat was also a popular choice. The effectiveness of online chat for example, could be exploited in virtual learning environments. Therefore, rather than wait for a long period of time for a response to a question posted on a discussion forum, a chat room facility could be used to make responses instantaneous. This makes sharing of knowledge quicker and more effective. However, this is not a fool-proof solution; as revealed in this study, there are those students who are too shy to post their questions, hence they would rather use face-to-face as a knowledge sharing channel.

5.4 Peer Tutoring

Peer tutoring has an impact on knowledge sharing; there is the potential for a less knowledgeable group to seek assistance from a more knowledgeable group. In coursework groups, the role of peer tutoring can be limited by other group members who are not comfortable sharing their knowledge with other groups. Institutions should foster the mentality that the primary function of group coursework is for students to learn from each other (with appropriate recognition of doing so) both within the group and between groups. This can be done as long as groups are made aware where to draw the line between learning from each other and plagiarism.

5.5 Social Networks

Social networks proved to be a very important aspect in students sharing of knowledge. Not only were they important for students in the same study year, but also in different study years. Due to a majority of students not being acquainted to students in another year, there is the danger of a significant amount of valuable knowledge not being 'passed down' to students in other study years. Departmental 'meet and greet' workshops could be held to give first year, second year students and finalists the opportunity to be acquainted with each other. These could contribute to the breaking down of knowledge-sharing barriers. Another suggestion would be not to limit posts by students on the discussion forum among peers in the same class, but rather make all posts visible to all students; so that a first year student, for example, could have his/her question answered by a finalist. In this way, knowledge is shared not only between students in the same cohort but across other cohorts.

5.6 Reciprocity

Students were motivated to share knowledge for various reasons. Among them were the 'sharing is caring' and the 'give and take'. Whether a student believed in the former more than the latter or vice-versa, this had implications on how they gained or lost in the knowledge sharing process. In practice, students should perhaps act as initiators in sharing knowledge, rather than speculating whether their peers would reciprocate. In this way, they breakdown the knowledge sharing barrier and create a platform where knowledge can be effectively shared.

6.0 Conclusion

Although, this research managed to gain insight on students' knowledge sharing behaviour, it was limited in its analysis of how group dynamics and member interaction actually affect the knowledge sharing process in coursework groups. This is an area of study that could be researched, and could be done through observation of group behaviour and analysis of how group members interact from the beginning of a piece of coursework to the end of it.

Nonetheless, this study has highlighted a number of issues that could help inform the design of coursework in future with respect to enhancing the knowledge sharing experience. For example, the influence of social networks and the impact of virtual learning environments can be used to encourage students to collectively share and reflect on what they have learnt after the submission of each piece of coursework, with contributions from students from other cohorts strongly encouraged. Moreover, the learning outcomes of each piece of coursework should be emphasised so that when students divide work among themselves, each individual is conscious of how their task contributes to the outcome of the coursework.

7.0 References

Bell, J., 2005. *Doing your research project: a guide to first-time researchers in education, health and social science*. Maidenhead: Open University Press.
Benckendorff, P., 2008. Using wikis to enhance the creative collaboration and knowledge management skills of tourism students. *CAUTHE 2008 Conference* [online].
http://132.234.243.22/conference/cauthe2008/refereed-papers/RP036.pdf , [accessed 15.10.09].
Berg, B., 2007. *Qualitative Research Methods for the Social Sciences* (6th ed). Boston:
Pearson Education.
Bos, M., 1937. Experimental study of productive collaboration. Acta Psychologica, 3, 315-326.
Boulos, M.N.K., Maramba, I. & Wheeler, S., 2006. Wikis, blogs and podcasts: a new generation of web-based tools for virtual collaborative clinical practice and education. *BMC Medical Journal* [online], 6(41), 1-8.
http://www.biomedcentral.com/content/pdf/1472-6920-6-41.pdf, [accessed 15.10.09].
Brace, I., 2004. *Questionnaire design: how to plan, structure and write survey material for effective market research.* London: Kogan Page.
Chen, I.Y.L. & Yang, S.J.H., 2007. A social network-based system for supporting interactive collaboration in knowledge sharing over peer-to-peer network. *International Journal of Human-Computer Studies* [online], 66(1). 36-50.
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WGR-4PK7PCF-2&_user=122878&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_acct=C000010119&_version=1&_urlVersion=
[accessed 14.10.09].
Cheng,Y.C. & Ku, H.Y., 2009. An investigation of the effects of reciprocal peer tutoring. *Computers in Human Behaviour* [online], 25(1), 40-49.
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VDC-4T13J8G-4&_user=122878&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_acct=C000010119&_version=1&_urlVersion=
[accessed 14.10.09].
Droege, S.B. & Hoobler, J.M., (2003). Employee turnover and tacit knowledge diffusion: a network perspective. *Journal of Managerial Issues*, 15(1), pp. 50-54.
Forman, E.A. & Cazden, C.B. (1985). Exploring Vygotskian perspectives in education: The cognitive value of peer interaction. In J.V. Wertsch (Ed.) *Culture, communication, and cognition: Vygotskian perspectives* (pp. 323-347). New York: Cambridge University Press.
Fowler, F.J., 2009. Survey research methods. London: Sage Publications.
Franz T., Larson J., Lavery T. & Winquist J., 1999. The role of information exchange in predicting group accuracy on a multiple judgment task. *Basic and Applied Social Psychology,* 2(1), 281–289.
Harley, D., Newall, S., Scarbrough, H. & Swan, J., 1999. Knowledge management and innovation: networks and networking. *Journal of Knowledge Management*, 3(4), 262-265.
Kvale, S., 2008. *Doing interviews.* London:Sage.
Lockspeiser, T.M. *et al.,* 2006. Understanding the experience of being taught by peers: the value of social and cognitive congruence. *Advances in Health Sciences Education* [online], 13(3), 361-372.
http://www.springerlink.com/content/q15691344t18n555/fulltext.pdf,
[accessed 14.10.09].
Majid, M.S. & Yueng, T.J., 2007. Knowledge sharing patterns of undergraduate students in Singapore. *Library Review* [online], 56(6), 485-494. http://www.emeraldinsight.com/Insight/viewPDF.jsp?contentType=Article&Filename=html/Output/Published/EmeraldFullTextArticle/Pdf/0350560607.pdf, [accessed 01.10.09].
Moore, N., 2000. *How to do research: the complete guide to designing and managing research projects*. London: Library Association Publishing.
Pierce, J. (2002). 'Intellectual Capital, Social Capital and Communities of Practice'
http://www.providersedge.com/docs/km_articles/Intellectural_Capital_-_Social_Capital_-_CoP.pdf
Sharratt, M. & Usoro, A., 2003. Understanding knowledge sharing in online communities of practice. *Electronic Journal of Knowledge Management*[online], 1(2), 187-196.
http://www.ejkm.com/volume-1/volume1-issue-2/issue2-art18-sharratt.pdf, [accessed 25.10.09].
Tan, J., 2009. *Higher education students' learning and knowledge sharing: A grounded theory study of blog use.* PhD. thesis, Department of Information Studies, University of Sheffield [online],
http://etheses.whiterose.ac.uk/92/2/Jin_Tan_Thesis_FINAL.pdf, [accessed 10.10.09].
Soller, A., 2004. Understanding knowledge-sharing breakdowns: a meeting of the quantitative and qualitative minds. *Journal of Computer Assisted Learning* [online], 20(3), 212-223.http://www3.interscience.wiley.com/cgi-bin/fulltext/118773363/PDFSTART, [accessed 12.10.09].
Walliman, N., 2005. *Your research project: step-by-step guide for the first-time researcher.* London: Sage.

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