STUDENT PERCEPTIONS OF GROUP DISCUSSION THROUGH FACE-TO-FACE AND MOBILE INSTANT MESSAGING IN AN ECONOMICS SUBJECT

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Abstract - This qualitative study explores student perceptions of group discussion in an economics subject. Students complete a group task by examining the competitive behavior of businesses in a specific market structure. Based on Vygotsky's socio-cultural constructivism, the study as designed strives to understand student discussion in groups through face-to-face and mobile instant messaging. Data were collected through interviews of forty-six business students who volunteered for this study. Even though the study found that students highly value the significance of both face-to-face and mobile instant messaging, the immediacy and dynamism of the face-to-face environment, and the interactive dialogue of face-to-face discussion are viewed more favorably by students than mobile instant messaging as the sole means of discussion. The convenience and ease of organizing meetings through mobile instant messaging was highlighted by students as one area where mobile instant messaging was practical as precursor to face-to-face discussions. This study can contribute to literature by providing insights to instructors in the discipline of economics on how to support student discussions in groups.

Index Terms - Economics, face-to-face discussion, group discussion, mobile instant messaging

I. INTRODUCTION

Economics is a subject that integrates theoretical skills, calculation, graphs, tables and equations to answer questions [1]. Students need to define complex ideas logically and fluently based on their understanding of this subject, therefore students often view economics as a difficult subject [2]. Some students may have high school economics knowledge and some may have had no prior economics knowledge when they start tertiary studies [3]. Consequently, a wide range of prior learning exposures to economics poses a challenge for lecturers in teaching and learning of economics.

Modern work requires graduates to have the ability to communicate, negotiate and anticipate what is to be done in practice rather than just doing the job as such [4]. Due to this, the scholarship of teaching and learning has greatly established discussion as a mode of inquiry to facilitate student learning. Classroom discussions can be organized in many different ways such as small group, large class, and online learning contexts [5].

Guided by these fundamental ideas, the design of group discussion in economics subjects generally requires the application of knowledge gained in the classroom and applied to exercises based on real world settings. Group discussions provide a space for students to construct meaning based on the problem presented to them. They also allow students to evaluate and calibrate their understanding of the problem [6] - [7].

The focus of a cooperative group is joint performance where members have high positive interdependence, are responsible for their own and each other's learning, and members hold self and others to high quality work [8]. This implies that one student's idea helps trigger a chain of ideas in other students, increasing not only the volume of ideas but also the quality [9]. Students take substantive responsibility for working together and that requires a shift in the responsibility for learning away from the teacher to the students [10]. Scaffolding in terms of guidance from peers will also influence an individual's understanding and management of problem solving [11]; and students serve as the major resource for one another in small groups [12]. These positive aspects of group discussions focus on the face-to-face mode.

Instead of gathering group members physically together at a scheduled time, members can communicate through the Internet asynchronously and synchronously [13]. Mobile wirelessly networked technologies have experienced surging popularity among students in institutions of higher education [14] - [15]. Many are willing to use such technologies for academic purposes [16]. Some anecdotal evidence suggests that mobile instant messaging can increase student participation through spontaneous discussions, boosting student self-confidence and enhancing the sharing of multiple resources [14].
There have not been many studies examining perceptions of business students of group discussions. Although several studies [17] - [19] have demonstrated how group work was embedded in economics, very few have examined how business

students discuss and work on real problems in groups using face-to-face discussions and mobile instant messaging. This study intends to explore student perceptions of group discussion in an economics subject and to what students perceived as the positive aspects of both types of discussions – face-to-face and mobile instant messaging. This study fills a gap in research, particularly in cases where group tasks are used in economics courses employing group discussion as the prominent feature of the assigned task to be completed.

II. THEORETICAL BACKGROUND

This study is based on Vygotsky's socio-cultural constructivism where human intellectual development is viewed as a cultural process that involves people's changing participation in the cultural activities whereby knowledge is not solely constructed within the mind of an individual; but, it is the interaction within a social context that involves learners in sharing and constructing their ideas and beliefs [20]. The transformation of participation can be explained in terms of knowledge that is continually enacted through human participation in a changing environment [21]. There are three underlying propositions for socio-cultural constructivism. Understanding is created through interactions with the environment; cognitive conflict is the stimulus for learning and determines what is learned; and knowledge evolves through social negotiation [22].

III. RESEARCH DESIGN

A qualitative research method was adopted for examining student perceptions of group discussion in an economics subject where students are asked to complete a group task by examining the competitive behavior of businesses in a specific market structure. The data were collected through focus groups and/or individual interviews. Both focus group and individual interviews were scheduled according to students' availability. An interview protocol was used to guide the researcher rather than fixing the wording or ordering questions. This provides students with opportunities to further elaborate on their experiences in group discussions. Also, it allows the researcher to collect in-depth data by having students articulate and reflect on their learning experiences (Bauer, 2003) [23].

The transcripts of the interviews were analyzed inductively with data that are exhibited in the form of direct quotations serving as the essential unit of analysis. The final categorization was checked by both co-researchers for agreement. To ensure confidentiality of students' identities, all the names used in this study are pseudonyms.

Purposive sampling was used in this study in selecting the participants. This means that if the researcher wants to discover, understand, and gain insight about a particular topic, then he/she must select a sample from which the most can be learned [24]. A total of forty-six business students were interviewed from a Foundation of Art course in a private university in Sarawak, Malaysia. The students were briefed that there was no connection between students' consented participation in the study, the data collected and the students' final grade. Table 1 displays the descriptive statistics of participants with the majority is female.

Gender	Number of students
Male	12
Female	34
Total	46

Table 1. Descriptive statistic of participants

IV. FINDINGS

Out of the forty-six students who participated in this study, thirty-nine undertook both face-to-face and mobile instant messaging to complete their group task. At the same time, there is one student who undertook physical meetings only in her group and six other students mainly undertook meetings through mobile instant messaging only. The interviews were transcribed verbatim. The quotes were then categorized into different themes as reported in positive aspects of face-to-face discussions, positive aspect of mobile instant messaging, and student concerns on forms of group discussions.

Positive aspects of face-to-face discussions

The results from this study suggest a better understanding of issues can be developed through peer interaction during the face-to-face discussions. This is due to students had more opportunities to understand other members' thinking; the clarity of tasks; the comparing, exchanging and sharing of ideas; and, the clarification and explanation of views by team members. For example, participants like Andrea, Cindy, Jenny, Mary, Sidek and Ying explained:

"… discussion together, compare and ask each other [sic]".
[Andrea, Focus group interview, 18th July 2016]

"When we are meeting, we can know about other people's thought, because everyone has different thoughts, we can learn from others [sic]."
[Cindy, Focus group interview, 18th July 2016]

"The physical [face-to-face] meeting helps. Because it is more clearer on what the team members should do; and they could exchange ideas as well [sic]."

[Jenny, Focus group interview, 18th July 2016]

"…. asking the senior the part that I don't understand and have a better understanding [sic]."
[Mary, Focus group interview, 21th July 2016]
"Because some of the questions like we can't understand the questions but the other members understand the questions so from there we can share the ideas … [sic]."
[Sidek, Focus group interview, 18th July 2016]

"Do better on the parts [of the assignment] after clarification from senior [sic]."
[Ying, Focus group interview, 21th July 2016]

Another positive aspect of face-to-face discussions is that team members are able to have a clearer picture on distributed tasks that they had to perform, which may result in fewer mistakes and hence tasks are well-managed. For example, three students, John, Joyce and Kenny shared:

"It is much more easier to understand because some members may not understand in English [sic]."
[John, Focus group interview, 20th July 2016]

"It makes us more clear to do the assignment properly. It is like less mistakes … [sic]"
[Joyce, Individual interview, 20th July 2016]

"We encounter anything that we don't know then we ask others [sic]."
[Kenny, Focus group interview, 20th July 2016]

Throughout the interviews, one student indicated his preference to have more meetings through face-to-face. For example, Henry wants more frequent face-to-face meetings so that more information can be shared among team members. He perceived the benefits of working with his team members is that they could identify their mistakes and improved on them. This is similar with what Joyce [Individual interview, 20th July 2016] shared in that fewer mistakes were made and could be quickly corrected in face-to-face discussions.

"When I work with the team members, (we) make mistakes and improve on it [sic] …"
[Henry, Individual interview, 19th November 2016]

Furthermore, gaining help from team members during face-to-face discussions is important particularly for team members who need support in the group task. For example, Bernard, Henry and Kristian commented:

"Not everyone is clear about the assignment. Maybe you don't know this part, I will ask the other students to do it and we are helping each other [sic]."
[Bernard, Focus group interview, 20th July 2016]

"It [face-to-face discussion] helps in the way that how to make the job better, share the information and help each other [sic]."
[Henry, Focus group interview, 18th July 2016]

"Help each other. Some questions that I don't know then I ask the members [sic]."
[Kristian, Focus group interview, 21st July 2016]

Moreover, constant feedback provided during face-to-face discussions enables students to complete the distributed tasks within the given timeline. For example, Jackson and Zoey appreciated the prompt feedback they received from their team members:

"… if everyone gives opinion so I can very fast finish the questions and I can get different questions from different people [sic] …"
[Jackson, Focus group interview, 20th July 2016]

"… because during the meetingkah, when we do our own work … we also can ask about the economics subject that we learn [sic] …"
[Zoey, Focus group interview, 18th July 2016]

Positive aspects of mobile instant messaging

The majority of students utilized mobile instant messaging to complement their face-to-face discussions. The study found that students mainly use WeChat messenger and WhatsApp messenger as the two mobile instant messengers.

Mobile instant messenger	Number of students
WeChat	39
WhatsApp	6
Total*	45

Table 2. Users of mobile instant messenger

* One student was only involved in face-to-face discussions. In total, there are 46 students who participated in this study.

One of the positive aspects of mobile instant messengers is that it allows users to communicate conveniently without having the hassle of setting up a meeting physically by accommodating every team member's schedule. For example, Bernard and Nancy commented that it is more convenient to arrange a group meeting:

"All of us come from different groups so we are having a problem for meeting up. Some [times] we just use the WhatsApp and discuss the part that which one we

need to do and what part you are going to do … [sic]."
[Bernard, Focus group interview, 20th July 2016]

"I ever asked this thing [face-to-face discussions], but a lot of excuses given by the team members, so the meeting is conducted in WhatsApp … Some members don't understand how to do their parts, other members explain so the other members can understand [sic]."
[Nancy, Focus group interview, 21st July 2016]

Secondly, due to time constraints and prior commitments, students use mobile instant messengers as a platform to allocate group tasks and respond to queries. For example, Danny, Jerome and Ronnie explained:

"… because each of us we don't have much time. We are from different tutorial groups … we separate our jobs like each member will be tasked differently [sic] …"
[Danny, Focus group interview, 20th July 2016]

"… WeChat … Ask them [team members] how to do some assignment … I can understand how to do the assignment."
[Jerome, Focus group interview, 20th July 2016]

"Because they [team members] will ask me the problems ... in the WeChat first and I will go and consult the lecturer and then after that I will understand better so I can explain to them [sic]."
[Ronnie, Focus group interview, 20th July 2016]

Third, the additional features of mobile instant messengers are that it enables users to share and upload files such as photos and recordings collected [Doris, Focus group interview, 21st July 2016; Vincent, Focus group interview, 20th July 2016] and post announcements to remind members on important dates and times for face-to-face meet ups [Henry, Focus group interview, 18th July 2016; Kristian, Focus group interview, 21st July 2016; Penny, Focus group interview, 21st July 2016].

Interestingly, two participants, Mary and Ying [Focus group interview, 21st July 2016] shared that they joked in WeChat to create fun and cheer team members up. Another participant, Melissa who was never exposed to mobile instant messenger has been using it actively since her group established a social group to discuss the task, "I usually don't play WhatsApp. Now I play WhatSApp because of economics assignment [sic]" [Focus group interview, 18th July 2016].

Student concerns on forms of group discussions

In this study, there are six students with no experience with face-to-face discussions. Their communication with team members depend solely on mobile instant messaging. The students who seek the clarity of tasks beyond the mobile instant messaging expressed their disappointment with this type of discussion because they preferred to have face-to-face discussions. For example, Vivian likes to meet her team members face-to-face but the only way to communicate with them is through mobile instant messaging, WeChat. The fact is that not all team members engaged equally in the discussion to stimulate participation. For example, Vivan's team members did not often discuss even by mobile instant messaging [Focus group interview, 19th July 2016].

"In a team, they are not often chat and discuss like this …"
[Vivian, Focus group interview, 19th July 2016]

Winnie shared her frustrations where team members are not proactive in responding to queries in the mobile instant messenger.

"We use WeChat but no one will reply the questions."
[Winnie, Focus group interview, 18th July 2016]

In order to maximize the benefits arising through discussion in face-to-face meetings, Joyce as a team leader required her team members to prepare in advance such as reading on relevant economic chapters, understanding certain terms of definitions and doing research prior to attending the meeting. This enforces a sense of responsibility among team members so that they are well-prepared to contribute their views and ideas during the meetings since each member's schedule is different [Joyce, Individual interview, 20th July 2016].

DISCUSSION

The current study provides students' perception of group discussion in two forms – face-to-face and mobile instant messaging. A better understanding of issues can be developed through peer interaction during face-to-face discussions compared to discussions only using mobile instant messaging. This means that for most students, face-to-face discussion is more likely than mobile instant messaging to stimulate interaction. It appears that face-to-face discussion is more intense and meaningful experience for many students. The results concur with past studies where "discussion groups may be the only way to reconceptualize the immediacy and dynamism of the face-to-face environment" [5] and students still favour the interactive dialogue of face-to-face conversational discussions [25]. This might suggest that a better understanding of issues is underpinned by the interactive dialogue that arise through face-to-face discussions.

In this particular research context where groups were formed by students from different tutorial groups, the challenge for finding a common time to meet is consistent with the past study [26] where locating a suitable time to meet among team members is deemed a time-consuming process.

In contrast, mobile instant messages are superior to face-to-face discussions in setting up meetings as long as users have both device and system connectivity and this enables users to share multiple resources [14]; send or receive messages, or upload files [15]. This was shared by students that the hassle in setting up physical meetings can be avoided by discussions through mobile instant messengers. This is in line with the past study [16] where students commented on the convenience and ease of communicating through text and instant messaging; and also used it to communicate with peers for academic purpose. In order to create meaningful learning through mobile instant messaging, it is not sufficient just to rely on posting an announcement and sharing resources. It is the matter of team members having to reflect on those postings, evaluate the shared resources and challenge each other's ideas that will most likely to lead to meaningful learning [27].

More importantly, some students have expressed that it is particularly through face-to-face discussion that there is an increase in clarity on allocated tasks each member is responsible for after communicating with team members. The process of organizing ideas and communicating them to others cultivates self-understanding. Furthermore, students can relate these ideas to their own experiences and to the experiences of other students in ways that would help them to better understand key economic concepts such as demand, supply, perfect competition [Vanessa, Focus group interview, 19th July 2016]. This is congruent with the past studies where students bring ideas and experiences to learning situations that advance and enrich understanding for everyone [28], and there is an active give-and-take of ideas between persons rather than one person passively learning from the other [29].

A past study [26] has demonstrated that in undertaking group assignments, students often allocated individual tasks among themselves. In fact, this was reported by some groups where the leader just distributed the work among team members and directed team members to complete their tasks at their own time. For example, Bernice [Focus group interview, 18th July 2016] and Jackie [Focus group interview, 19th July 2016] experienced this and just concentrated on their allocated tasks. As an illustration, when writing a report, one student is tasked with writing the introduction section, one will write the content, and another will be responsible to write conclusions and recommendations etc. If each member is interested in his or her own area of specialization, without referencing what other members have done [26], then it would most likely to lead to group members performing these tasks in isolation where each just concentrated on his/her own tasks. Thus, better coordination among team members in discussions is an area to look into so that students will benefit from joint performance as team member [8].

CONCLUSION

The overall results indicate that most students highly value the significance of both face-to-face discussion and also mobile instant messaging for some tasks. Students favour the immediacy and dynamism of the face-to-face environment; and the interactive dialogue of face-to-face conversational discussion. The convenience and ease of organizing meetings through mobile instant messaging is a positive aspect for non-face-to-face discussions. Students' frustration arose due to not all team members being engaged equally in the discussion and members who were not responsive to enquiries virtually. In some groups, the main communication platform relied solely on mobile instant messaging. There are inadequacies with this approach. By combining both discussion forms, the challenges associated with relying solely mobile instant messaging are mitigated. This study can provide insights to instructors in the economics discipline on how to support student discussion via multiple platforms, in particular if we are to better understand the various ways students can engage in quality learning through discussions, both face-to-face and remotely via mobile instant messaging and other similar e-platforms.

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REFERENCES

[1] V. Arsaythamby and P. Julinamary, "Students' Perception on Difficulties of Symbols, Graphs and Problem Solving in Economic," Procedia - Soc. Behav. Sci. 177 (2015), vol. 177, no. July 2014, pp. 240–245, 2015.

[2] C. G. Johnston, R. H. James, J. N. Lye, and I. M. McDonald, "An Evaluation of Collaborative Problem Solving for Learning Economics," J. Econ. Educ., vol. 31, no. 1, pp. 13–29, 2000.

[3] M. P. Cameron and S. Lim, "Recognising and building on freshman students' prior knowledge of economics," New Zeal. Econ. Pap., vol. 49, no. 1, pp. 22–32, 2015.

[4] R. Iedema and H. Scheeres, "From Doing Work to Talking Work: Renegotiating Knowing, Doing, and Identity," Appl. Linguist., vol. 24, no. 3, pp. 316–337, 2003.
[5] K. Hamann, P. H. Pollock, and B. M. Wilson, "Assessing Student Perceptions of the Benefits of Discussions in Small-Group, Large-Class, and Online Learning Contexts," Coll. Teach., vol. 60, no. 2, pp. 65–75, 2012.
[6] C. E. Hmelo-Silver, "Problem-based learning: What and how do students learn?," Educ. Psychol. Rev., vol. 16, no. 3, pp. 235–266, 2004.
[7] H. G. Schmidt, M. L. De Volder, W. S. De Grave, J. H. C. Moust, and V. L. Patel, "Explanatory models in the processing of science text: The role of prior knowledge activation through small-group discussion.," J. Educ. Psychol., vol. 81, no. 4, pp. 610–619, 1989.
[8] D. W. Johnson and R. T. Johnson, Learning together and alone: Cooperative, competitive and individualistic learning, 5th ed. Massachusetts: Allyn and Bacon, 1999.
[9] D. Sirias, "Combining Cooperative Learning and Conflict Resolution Techniques to Teach Information Systems," J. Educ. Bus., vol. 80, no. 3, pp. 153–158, 2005.
[10] N. Davidson and C. H. Major, "Boundary Crossings: Cooperative Learning, Collaborative Learning, and Problem-Based Learning," J. Excell. Coll. Teach., vol. 25, no. 3&4, pp. 7–55, 2014.
[11] R. Glaser, "The maturing of the relationship between the science of learning and cognition and educational practice," Learn. Instr., vol. 1, no. 2, pp. 129–144, 1991.
[12] S. J. Jang, "A study of students' construction of science knowledge: Talk and writing in a collaborative group," Educ. Res., vol. 49, no. 1, pp. 65–81, 2007.
[13] N. Chang, "E-discussions as a complement to traditional instruction: Did the students like online communication and why?," J. Early Child. Teach. Educ., vol. 27, no. 3, pp. 249–264, 2006.
[14] P. Rambe and A. Bere, "Using mobile instant messaging to leverage learner participation and transform pedagogy at a South African University of Technology," Br. J. Educ. Technol., vol. 44, no. 4, pp. 544–561, 2013.
[15] S. Wang, "Collaboration factors and quality of learning experience on interactive mobile assisted social E-learning," Turkish Online J. Educ. Technol., vol. 13, no. 2, pp. 24–34, 2014.
[16] S. Lauricella and R. Kay, "Exploring the use of text and instant messaging in higher education classrooms," Reasearch Learn. Technol., vol. 21, no. 3, pp. 1–18, 2013.
[17] F. Forsythe, "Problem-based Learning," 2010. [Online]. Available: https://www.economicsnetwork.ac.uk/handbook/printable/pbl2.pdf. [Accessed: 08-Jun-2014].
[18] R. J. B. Goodman, "Problem-based learning: Merging of economics and mathematics," J. Econ. Financ., vol. 34, no. 4, pp. 477–483, 2010.
[19] R. Guest, "The Case for Integrating Accounting , Finance and Economics in Teaching the GFC through a Problem-Based Learning Approach Author," vol. 9, pp. 11–24, 2012.
[20] B. Rogoff, The cultural nature of human development. Oxford: Oxford University Press, 2003.
[21] B. Rogoff, E. Matusov, and C. White, "Models of teaching and learning: Participation in a community of learners," in Handbook of education and human development: New models of learning, teaching and schooling, David R.Olson and N. Torrance, Eds. London: Basil Blackwell, 1996, p. 388-414.
[22] J. R. Savery and T. M. Duffy, "Problem Based Learning: An instructional model and its constructivist framework," Knowl. Creat. Diffus. Util., vol. 35, no. 5, pp. 31–38, 1995.
[23] G. Bauer, "Qualitative Assessment Activities for Pew Grant on Problem-Based Learning (PBL)," 2003. [Online]. Available: https://www1.udel.edu/pbl/Final-Report-Pew-PBL.pdf. [Accessed: 04-Dec-2017].
[24] S. B. Merriam, Qualitative research: A guide to design and implementation - Revised and expanded from qualitative research and case study applications in education. San Francisco: Jossey-Bass, 2009.
[25] M. J. W. Thomas, "Learning within incoherent structures: The space of online discussion forums," J. Comput. Assist. Learn., vol. 18, no. 3, pp. 351–366, 2002.
[26] M. Li and J. Campbell, "Asian students' perceptions of group work and group assignments in a New Zealand tertiary institution," Intercult. Educ., vol. 19, no. 3, pp. 203–216, 2008.
[27] R. A. Ellis, P. Goodyear, M. Prosser, and A. O'Hara, "How and what university students learn through online and face-to-face discussion: Conceptions, intentions and approaches," J. Comput. Assist. Learn., vol. 22, no. 4, pp. 244–256, 2006.
[28] R. S. Matthews, "Collaborative learning: Creating knowledge with students," in Teaching on solid ground: Using scholarship to improve practice, R. J. Menges and M. Weimer, Eds. San Francisco: Jossey-Bass Publishers, 1996, pp. 101–124.
[29] W. Damon, "Peer education: The untapped potential," J. Appl. Dev. Psychol., vol. 5, no. 4, pp. 331–343, 1984.

